

# MILITARY COMMUNICATIONS – ELECTRONICS BOARD

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## MCEB



**FREQUENCY RESOURCE RECORD SYSTEM (FRRS)**

**STANDARD FREQUENCY ACTION FORMAT (SFAF)**



**MCEB PUB 7**  
**30 JUNE 2005**



FREQUENCY RESOURCE RECORD SYSTEM  
STANDARD FREQUENCY ACTION FORMAT  
FORWARD

**Purpose:** This document establishes the Frequency Resource Record System (FRRS) Standard Frequency Action Format (SFAF).

**Authority:** This document is issued under the authority of DoD Directive 5100.35, Military Communications-Electronics Board (MCEB) with changes thereto.

**Amendments and Review:** This document will be reviewed in it's entirety by the Spectrum Operations Permanent Working Group of the Frequency Panel (FP) every five years and amendments will be issued by the Military Secretary, MCEB, when appropriate. This document supersedes MCEB PUB 7 dated 31 December 2003. Any suggested changes to MCEB Pub 7 can be forwarded to:

MCEB OJCS

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Washington, DC 20318-6100

FOR THE CHAIRMAN:

Distribution: See

Appendix C

LLOYD GILHAM  
Captain, U.S. Navy  
Military Secretary

## RECORD OF CHANGES AND CORRECTIONS

[illegible]

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# STANDARD FORMATS FOR RADIO FREQUENCY PROPOSALS, ASSIGNMENTS, MODIFICATIONS, RENEWALS, REVIEWS, AND DELETIONS

## 1. GENERAL

**a. Purpose.** This document describes the Standard Frequency Action Format (SFAF) used for Department of Defense (DoD) radio frequency proposals, assignments, modifications, renewals, reviews, and deletions. Frequency assignment proposals for space or earth stations must be in SFAF for entry into the FRRS and in the International Telecommunication Union (ITU) Appendix 3 format for submission to the ITU.

**b. Appendixes.** Appendix A contains a list of SFAF data items with their input requirements. Appendix B contains a list of acronyms used throughout the document. Appendix C contains the document Distribution List. Appendix D contains a summary of major changes from MCEB PUB 7 dated 31 December 2003.

**c. Definitions.** The following definitions apply to terms used in processing SFAF data into the Frequency Resource Record System's (FRRS) database.

**(1) Frequency Assignment.** A frequency assignment is an authorization to operate, within prescribed parameters, electronic equipment that emits radio frequency (RF) energy. The authorization contains the assignment's technical parameters and administrative information.

**(2) Frequency Assignment Record.** A frequency assignment record is a grouping of data entries pertaining to an authorized frequency assignment stored within a database.

**(3) Frequency Assignment Transaction.** A frequency assignment transaction (also called a proposal) is a formatted grouping of data entries used to request a new assignment, an update, or a deletion of a frequency assignment. A transaction always starts with Data Item 005 (Security Classification) and ends with the highest numbered data item used for that transaction.

**(4) Transaction File.** A transaction file is American Standard Code Information Interchange (ASCII) formatted and contains one or more frequency assignment transactions. When two or more transactions are contained in the same transaction file, SFAF Data Item 005 delineates succeeding transactions and there are no spaces between transactions, see example.

**Example:**

```
005. U
...
805. 20031105
005. U
...
```

**(5) Data Item.** A data item is made up of a data item number, a data item security classification indicator (if required), and the data entry.

**(6) Data Item Number.** A data item number (also referred to as a data item identifier) is used to identify each data item in an SFAF frequency assignment transaction. It consists of a unique 3-digit number followed by a period and a space. For example, **(005. )** is used to identify the record's security classification. Appendix A contains a sequential listing of all valid data item numbers and applicable remarks/instructions.

**(7) Data Item Security Classification Indicator.** The data item classification indicator is used to indicate the classification of the data entry. This indicator follows the space after the data item number and is formatted using a single letter enclosed in parentheses followed by a space. The permissible entries are **(U)** for UNCLASSIFIED, **(C)** for CONFIDENTIAL, **(S)** for SECRET and **(T)** for Top Secret (for special applications).

**(8) Data Element.** A data element is the most basic type of data entry. It consists of a series of letters and/or numbers immediately following the data item number or data item security classification indicator. Normally, one data element equates to one data item. For example, **FA** (used in Data Item 113 to denote station class) and **FT BRAGG** (used in data items 301 and 401 to show antenna location) are both data elements.

**(9) Data Entry.** A data entry may contain one or more data elements. For example, **113. FA** is a data entry consisting of the data item number (113. ) and one data element (FA); **152. M,NHIA** is a data entry (Coordination Data) consisting of the Data Item number (152. ) and two data elements: first, the code for Mexico (M), and second, the amplifying information (NHIA) meaning No Harmful Interference Anticipated. Multiple data elements in the same data entry are separated by a comma or, in some cases, enclosed within parentheses e.g., **110. K6737.5(6736)**.

**(a) Single Occurring Data Entry.** A single occurring data entry may contain either one or more data elements; however, the data entry can appear only once in a frequency assignment transaction. For example, **005. CE,20051231** and **010. N** are both single occurring data entries.

**(b) Multiple Occurring Data Entry.** Data entries that appear more than once in a frequency assignment transaction are called multiple occurring data entries. In some cases, special rules apply as stated in Appendix A. Multiple occurring data entries are formatted with a data item number followed by a data item occurrence identifier, data item security classification indicator (if required), and the data entry.

**(10) Permanent Frequency Assignment.** There are two types of permanent frequency assignments. First, there are those long term assignments which contain a review date that is 5 or 10 years from the initial date of entry or 5 or 10 years from most recent modification date. The second category of permanent records are those records which have an expiration date between 90 days and 5 years old, are located within the United States & Possessions (US&P), and are sent to the National Telecommunications & Information Administration (NTIA) for approval.

**(11) Temporary Frequency Assignment.** There are two types of temporary assignments. First, there are those US&P assignments that are less than 90 days of duration which would be sent to NTIA for U.S. national level approval as a permanent assignment if their duration exceeded 90 days. The second type of temporary record is the record that does not have to be sent to NTIA and does not contain a review date. Examples of these types of records are



the Federal Communications Commission (FCC) annually coordinated frequencies. These records consist of US&P records that are between 1 and 365 days of duration and do not have to be sent to NTIA for approval. This group also consists of all Outside the United States & Possessions (OUS&P) records that have an expiration date of 1 to 365 days duration.

## **2. FORMAT**

**a. Message/E-mail Format.** Temporary SFAF frequency assignment transactions are usually sent via attached files to E-mail or Defense Message System (DMS) messages. Message or E-mail attachments are used by spectrum management organizations that provide frequency assignment transaction data to those organizations which enter the data into a frequency assignment automated database and/or transaction processing system. These transaction files contain only the data elements which are to be loaded into the database. Any additional information relating to the transactions are placed in the text of the DMS message or E-mail. When these procedures are followed the lowest level automation data entry person only has to open the file and load the transaction data directly into the spectrum management software package. (The placing of SFAF transactions in the text of DMS messages or E-mails requires more data entry work because the extraneous information such as headings, subject lines and other non transaction information must be manually stripped from the message before the assignment data can be entered into the database.)

The following guidance is provided for the preparation of messages/E-mail SFAF with SFAF formatted file attachments:

**(1) Headings.** Message headings must be formatted in accordance with approved DMS or E-mail communications procedures.

**(2) Security Classification.** The overall security classification of the message is based on that of the highest classified data item or combination of data items contained in the transaction file or in the text of the DMS message or E-mail. All messages originated or received OUS&P should have an appropriate releasability statement indicating whether or not the message can be released to host nation officials.

**(3) Subject.** The subject line of the message begins with FREQUENCY PROPOSAL or FREQUENCY ASSIGNMENT, followed by the appropriate clarification as required, e.g., FREQUENCY PROPOSAL, USA. For crisis or contingency requirements, include FOR CONTINGENCY COMMUNICATIONS and the UNCLASSIFIED plan name or number if available, e.g., FREQUENCY PROPOSAL FOR CONTINGENCY COMMUNICATIONS, USN (OP PLAN 207-81).

**(4) Text.** A message may contain information pertaining to more than one frequency transaction. When this occurs, Data Item 005 (Security Classification) must be the first data item listed in each transaction portion of the file. All data items in each portion of the transaction file must be in ASCII format, listed in a vertical format, and be in numerical sequence (005 through 999). If a data item requires more than one line of text, the data item number or data item occurrence identifier must precede each additional line. See paragraph 3c(1) for details on entering more than one line of text for a particular data item.

**b. Abbreviated Format.** An abbreviated format may be used for temporary frequency proposals. At a minimum, the following data items must be included: 005, 010, 110, 113, 114, 115, 140, 141, 144, 200, 207, 300, 301, 303, 340, 400, 401, 403, 440, 502, 702, 803, and other applicable data items in the 500 data item series. For TOP SECRET, SECRET, or CONFIDENTIAL frequency proposals, include applicable SFAF Data Items 013-019 as required by Appendix A. Note: For Defense Communications Systems (DCS) high-frequency (HF) entry exercises, also include Data Items 354 and 454; for pulsed emitters, also include Data Items 346 and 347; for aeronautical navigational aids and for air traffic control assignments, also include Data Items 711 and 801.

**c. Automated Processing of Formatted Files.** Automated transactions prepared for transmittal from one computer to another either via the Secure Internet Protocol Routing Network (SIPRNET) or by STU-III secure devices must begin with the given file name, followed by a data string of the transaction(s) beginning with Data Item 005 through Data Item 999. These formatted files may be created on personal computers (PCs), using an editor or word processing software. The files created must be saved in the ASCII or equivalent text format.

### 3. PROCEDURES

The following procedures must be followed when using the SFAF:

**a. Prohibited Data Entries.** The following symbols should **not** be used as input data:

& (ampersand)	? (question mark)
: (colon)	< (less than)
; (semicolon)	> (greater than)
[ (left square bracket)	% (percent sign)
] (right square bracket)	! (exclamation mark)
\ (reversed slant bar)	^ (Insert caret)
# (number/pound sign)	" (quotation mark)
@ (at sign)	' (apostrophe)

**b. Restricted Data Entries.** The parenthesis ( ) cannot be used as part of text data in any data item since its use is reserved for data entry classification following the data item number(s) or as part of Data Items 110, 340, and 440. Other data restrictions are shown below:

(1) The slant bar may be used as data in Data Items 020, 112, 302, 340, 341, 343, 355, 362, 402, 440, 443, 455, 462, 501, 502, 503, 504, 511, 512, 513, 520, 530, 707, 804, 983, and 985.

(2) The comma can only be used as data in Data Items 014, 018, 108, 145, 152, 501, 502, 503, 504, 520, 803, and 804.

(3) The dash cannot be used in Data Items 301 and 401.

(4) The \$ (dollar sign) may not be used as the first character of a data entry when submitting new or notification transactions. See paragraph 3e for permitted uses of the dollar sign.

**c. Data Item Occurrence Identifiers.** Slant bars and commas are used as data item occurrence identifiers as indicated below:

**(1) Slant Bars.** Slant bars are used to identify the order of occurrence of such data when modifying an existing record (e.g., **500/2. S165** or **500/02. S165**).

Order of occurrence identifiers are not used for the following free-text data items where each line begins with only the 3-digit number: 502, 520, 531, 801, 804, 806, and 807.

**(2) Commas.** Commas are used to separate elements within a data entry (e.g., **152. M,NHIA**). However, commas and slant bars cannot be used interchangeably; that is, if input instructions specify a comma, a slant bar cannot be used and vice versa.

**d. Receiver Location Identifiers.** Receiver location identifiers consisting of the letter R and a 2-digit number (01 through 30) are used to indicate whether the data is associated with the first, second, third, etc., receiver location. The receiver location identifier is entered immediately following the data entry reported for that data item. Consider, for example, **400. CO,R02** in which **400.** (State/Country) is the data item identifier, **CO** (Colorado) is the data entry for that item, and **R02** indicates that the data applies to the second receiver location. Note: If no receiver location identifier is specified, the first occurrence is assumed (e.g., **400. CO**).

**e. Data Item Purge Identifier.** A dollar sign following a data item number (e.g., **152. \$**) indicates that the data item is to be purged from the existing record. If a data entry contains more than one data element, then the entire entry is deleted. If a data item contains multiple data entries, the order of occurrence for each entry to be purged must be specified. Consider for example, **207/2. \$** and **207/3. \$**. In this example, the data item occurrence identifiers (**/2** and **/3**) indicate that the second and third operating unit designators in the record are to be purged. All remaining entries will be automatically renumbered during the purge process. Note: If a data item occurrence identifier is not specified, the first occurrence is assumed (e.g., **207. \$**). A data item being purged cannot be followed by an entry to add data in the same data item/occurrence, except for Data Items 502, 520, 531, and 804 which are discussed in Appendix A.

**f. Types of Actions.** Six types of actions are used for the input of SFAF frequency assignment transactions (see Appendix A, Data Item 010). A combination of all types can be included in a transaction file. Formats used for each type of action are described below.

**(1) New (N).** The New action can be used to create frequency assignments. If a frequency is assigned to a transmitter location, a frequency assignment can be generated using a proposal. Figure 1 is an example of a frequency assignment proposal (or transaction) used to create an HF assignment.

005. UE
010. N
102. AF 881234
110. K4726.5(4725)
113. FA
114. 3K00J3E

115. K10  
 130. 1HX  
 144. O  
 200. USAF  
 201. PACOM  
 202. PACAF  
 204. ACC  
 205. 5AF  
 206. 475ABW  
 207. 1956CG  
 209. JPN  
 209/2. JPAC  
 300. J  
 301. TOKOROZAWA  
 303. 354750N1393844E  
 340. G,AN/GRC-212  
 343. PC /05737  
 357. 9  
 362. S  
 363. H  
 400. J  
 401. OWADA  
 403. 354645N1393254E  
 406. 3000  
 440. G,AN/GRC-212  
 443. PC /05737  
 457. 6  
 462. S  
 463. H  
 500. E029  
 502. AF-OR-CHANNEL. USAF MANAGED ASSIGNMENT  
 511. AIR OPERATIONS  
 512. AIR/GROUND/AIR COMMUNICATIONS  
 513. TRAINING  
 701. T08  
 702. ACC 88-005

Figure 1. A Frequency assignment proposal (or transaction) used to create an HF assignment.

**(2) Modification (M).** The Modification action is used to modify frequency assignments; however, it cannot be used to modify the agency serial number, frequency (except reference frequency), or transmitter state/country data items. At a minimum, Data Items 005, 010, 102, 110, 144, 203 (for Army US&P actions), 300, 301, 702, 803, and any data items to be modified or deleted, will be included. For TOP SECRET, SECRET, or CONFIDENTIAL frequency proposals, include applicable SFAF Data Items 013-019 as required. (See Appendix A.) When a data item is to be modified, include the data item number and the new data entry. The computer processor automatically deletes the old data entry except for Data Items 502, 520, 531, and 804; in which case, the new data entry is added to the existing data entry unless those data items are preceded by the data item number and a dollar sign as described in paragraph 3e. See paragraph 4a(3)(f) for modifying classified information in Data Items 502, 520, 531, and 804. All data items used will be listed in the same sequence as they appear in Appendix A.

Figure 2 is an example of a message frequency proposal (or transaction) used to change Data Item 114, delete the old Data Item 502 data entry, and add a new Data Item 502 data entry.

<p>FM JFP MCEB WASHINGTON DC//NMSC//  TO JFMO PAC HONOLULU HI  AIG 8788  INFO COMPACFLT PEARL HARBOR HI//NSMO/N6//  NAVCOMTELSTA GUAM GU//NSMO//  BT  CONFIDENTIAL<sup>a</sup>//N02420//  MSGID/GENADMIN/NMSC/-/JUN//  SUBJ/FREQUENCY MODIFICATION USN (U)//  REF/A/JFMO PAC HONOLULU HI/021232Z JUN 03//  RMKS/1. THE FOLLOWING RESPONDS TO YOUR REQUEST REF A.  005. CH,DEOADR  010. M  014. 19910520, PACOM OP PLAN 91-003  015. DATA ENTRIES NOT PRECEDED WITH (C) OR (S) ARE UNCLASSIFIED  102. N 773101  110. K16235  113. FX  114. (C) 12K0B9W  115. K10  144. O  300. J  301. TOTSUKA  502. \$  502. (C) TO SATISFY REQUIREMENT FOR TWO ADDITIONAL VOICE  502. (C) CHANNELS DCS 77BB01 DURING CONTINGENCY OPS.  702. NESC 91-001  803. KEITH VAN BLARCOM, DSN 653-0104</p>
<p><sup>a</sup> Classified for illustration purposes only</p>

Figure 2. Frequency proposal (or transaction) used to modify an existing frequency assignment.

The receiver location identifier must be used to modify data items when multiple receivers are involved. For example, if the third occurrence of antenna gain for the second receiver location is to be modified, it would be formatted as **457/3. 12,R02**.

Frequency assignment records are normally reviewed every five years, or whenever the assignment is modified. The following data items must be submitted when only the review date is to be changed: 005, 010, 102, 110, 144, (203 for Army US&P actions), 300, 301, 504 (for Interdepartment Radio Advisory Committee (IRAC) records), 702, and 803. For TOP SECRET, SECRET, or CONFIDENTIAL frequency proposals, include applicable SFAF Data Items 013-019 as required by Appendix A. Data Items 400 and 401 are also required for satellite downlink receivers. Figure 3 is an example of a frequency assignment proposal (or transaction) used to update a record's review date.

<p>005. UE  010. M  102. AR 733489</p>
--

110. M32.05  
 144. Y  
 203. WS  
 300. NM  
 301. WHITESANDS MISSILE RANGE  
 504. RECORD REVIEW - NO CHANGES  
 702. WSMR91102105  
 803. T. BANKS, DSN 235-6010

Figure 3. A frequency proposal (or transaction) used to update a record's review date.

**(3) Deletion (D).** The following data items are required to delete an entire frequency assignment record from the FRRS database: 005, 010, 102, 110, 144, 203 (for Army US&P actions), 300, and 301. For TOP SECRET, SECRET, or CONFIDENTIAL frequency proposals, include applicable SFAF Data Items 013-019 as required. (See Appendix A.) Data Items 400 and 401 are also required for satellite downlink receivers. Figure 4 is an example of a frequency proposal (or transaction) deleting an assignment from the FRRS database.

005. UE  
 010. D  
 102. AF 748121  
 110. M9375  
 144. Y  
 300. TX  
 301. BERGSTROM  
 702. ACC 81-171  
 803. B. BERRY, DSN 471-7050

Figure 4. A frequency proposal (or transaction) used to delete a frequency assignment record from the FRRS database.

**(4) Notification (F).** This type of action is to be used to notify IRAC that a frequency authorized under a group assignment is being brought into use. This action is based on the authority granted previously by IRAC and when the assignment being created is to be stored in the Government Master File (GMF). The Notification action is formatted the same as a New action, except that the agency serial number of the group assignment record stored in the GMF must be entered in Data Item 105. The Notification action is limited to Military Departments (MILDEPs)/AGENCY USE ONLY.

**(5) Renewal (R).** Frequency assignment records are normally reviewed prior to their expiration date or whenever they are modified. When only the expiration date is to be changed, the following data items will be submitted: 005, 010, 102, 110, 141, 144, 203 (for Army US&P actions), 300, 301, 701, 702, and 803. For TOP SECRET, SECRET, or CONFIDENTIAL frequency proposals, include applicable SFAF Data Items 013-019 as required. (See Appendix A.) Data Items 400 and 401 are also required for satellite downlink receivers. Enter other data items in the 700 series if applicable. If the record contains Data Item 141 (Expiration Date), and if data items other than Data Item 141 must be updated, a Renewal (R) action may be used, and the other data items must be modified as outlined in paragraph 3f(2). Figure 5 is an example of a frequency proposal (or transaction) used for a renewal action.

005. CE,DEOADR <sup>a</sup>
010. R
102. AR 774489
110. M148.025
141. 19920613
144. Y
203. DW
300. DC
301. WASHINGTON
701. A04
702. MDW0911222
803. SSG SMITH, DSN 335-2486
<sup>a</sup> Classified for illustration purposes only

Figure 5. A frequency proposal (or transaction) used for a Renewal action.

**(6) Administrative Modification (A).** This type of action is used to make changes to the FRRS record in the three general categories outlined below.

**(a) Typographical Corrections.** These changes are made to correct information in a database record that is different from that contained in the official document (i.e., the GMF record for US&P assignments).

**(b) Changes to Administrative Data Items.** Changes to administrative data (e.g., the 200 series and/or other non-IRAC data items) are made for standardization or reorganizational reasons, etc. Guidance concerning data items that may be changed for these reasons will be disseminated by a MILDEP, an agency, or a Combatant Commander (COCOM) directive. The Review Date (Data Item 142) will not be changed unless it is specifically included in the administrative modification request. Input requirements are usually the same as those required for a Modification action (paragraph 3f(2)). In all cases, authority for administrative changes will be the Joint Frequency Panel (JFP) or the appropriate MILDEP, agency, Frequency Management Office (FMO), or COCOM. Figure 6 is an example of a change made to Data Items 204 and 205.

005. UE
010. A
102. AR 834002
110. M36.510
144. N
203. PA
204. USARPAC
205. 1106SIGBDE
300. HI
301. FT SHAFTER
701. A04
702. KDH091102199
803. K.D. HOLTON, DSN 315-438-8219

Figure 6. A frequency proposal (or transaction) used to administratively change an existing database record.

**g. Multiple Record Changes (also known as Mass Changes).** Multiple record changes are often required for compliance with international, national, or DoD rules and regulations. Mass changing of records is done three different ways.

(1) Fields in records needing to be changed are either NTIA reportable or not NTIA reportable. See the “**To IRAC**” column in Table A1 Summary of Data Item Specifications to determine if a data field is IRAC reportable. For DoD FRRS records containing IRAC reportable fields needing to be mass changed by NTIA, a change request must be forwarded to the responsible MILDEP. The MILDEP will prepare a change request letter and forwarded it to NTIA Frequency Assignment Branch and/or to the IRAC Frequency Assignment Subcommittee (FAS). After the request is approved the change will be completed by the Frequency Assignment Branch and distributed via the monthly GMF CD ROM to complete the update of the FRRS database permanent record.

(2) The second method of mass change is done by the responsible organization if they are changing 25 records or less. The submitting organization will prepare an Administrative Modification (SFAF Data Items 010. A and 144. N for changing non IRAC reportable fields) and submit the transaction in the same manner as any other transaction is submitted to change a database record. To mass change small numbers of IRAC reportable fields the submitting organization will prepare a normal modification transaction (SFAF Data Item 010. M for changing IRAC reportable fields). In these instances the entire record must be reviewed/updated in accordance with NTIA policy.

(3) The last method of mass change is for changing large groups of non NTIA reportable fields in records (26 records or more) which may or may not be within the purview of one responsible organization. The Joint Spectrum Center (JSC) can assist organizations with large quantities or records requiring a mass change. The JSC researches the entire FRRS data base to locate all affected records and coordinates with the responsible organizations for their approval before making the requested changes. This is especially important when records of different responsible agencies contain data that should be mass changed at the same time. For example, a request to fill Data Item 203 in all Navy/Marine Corps records with either USN or USMC could involve records managed by the Navy and all COCOMs. Requests for JSC assistance in planning and processing multiple record changes may be made by letter or E-mail. . Multiple record change requests must indicate the select criteria required to identify the records that are to be changed and the data items that are to be modified. Multiple record change requests should be carefully thought out and precisely worded to prevent inadvertent modification of nonapplicable records. Input requirements may be supplied by using either the data item number or narrative text. For example:

(a) If Data Item 200 equals United States Air Force (USAF) or joint service (JNTSVC) and (a) the agency serial number starts with AF and (b) Data Item 207 equals 376SW, change Data Item 207 to 388SW. Process multiple record changes with Data Item 010 equal to A and Data Item 144 equal to N.

(b) If Data Item 200 equals USA and Data Item 114 equals 6K00A3E, change Data Item 114 to 6K00B9W. If Data Item 144 equals Y, enter Data Item 010 as M. If Data Item 144 equals O, U, or blank, enter Data Item 010 as A.



#### **4. GENERAL RULES REGARDING TRANSACTION SECURITY CLASSIFICATION AND THE PROCESSING OF SECRET FREQUENCY ASSIGNMENT TRANSACTION DATA TO NTIA.**

The FRRS database contains UNCLASSIFIED, CONFIDENTIAL, and SECRET data, plus data requiring special handling instructions (listed under Data Item 005 in Appendix A). The following rules apply to the transaction security classification of such data and to the processing of SECRET frequency assignment transactions submitted to NTIA. See paragraph 5 for the processing of Top Secret (TS) data.

##### **a. Transaction Security Classification.**

**(1) Data Item 005 (Security Classification).** Data Item 005 is required for all SFAF frequency assignment transactions. For New actions, Data Item 005 must contain the record's security classification and any special handling instructions (note that special handling codes are mandatory for all proposals). For Modification and Deletion actions, Data Item 005 must show the security classification and special handling instructions of the record to be modified or deleted; therefore, the security classification shown in Data Item 005 may be different from the actual security classification of the message or data file used to modify or delete the record. For example, a message or data file containing changes to an UNCLASSIFIED data item in a classified record is, by itself, UNCLASSIFIED unless the change contains data items that are considered classified when listed together. Therefore, an "S" or "C" entered in Data Item 005 of a Modification or Deletion action does not necessarily make that message or data file classified; it only indicates the security classification of the existing SFAF record that is to be acted upon.

**(2) Data Item 006 (Security Classification Modification).** Data Item 006 is only used in conjunction with Data Item 005 to change the security classification, special handling code, or declassification/review instructions of an existing SFAF record. Data Item 005 will contain the record's security classification and special handling instructions as they presently exist, and Data Item 006 will contain the new security classification, special handling code, and declassification/review instructions. Once again, the security classification of the message or data file containing the modification is based solely on the overall content of the message or data file.

**(3) Classification Guide and Entry Procedures for SECRET or CONFIDENTIAL data items.** The following guidelines and procedures apply to classified data items.

(a) For the SFAF, SECRET and CONFIDENTIAL data must be identified by entering an S or C security classification indicator within the parentheses immediately following the data item number (see Figure 7, Data Item 114/2) and Data Item 015 must contain: **"DATA ENTRIES NOT PRECEDED WITH (C) OR (S) ARE UNCLASSIFIED."** A (U) is not entered for UNCLASSIFIED data items. The security classification indicator is not considered part of the data entry and is therefore not included in the maximum number of data characters permitted. Special handling codes are not entered at the data item level; they are entered only with the overall record security classification in Data Item 005 or 006.

(b) Frequency assignment records maintained in the DoD automated FRRS database cannot be classified higher than SECRET.

(c) Data items are generally classified according to their individual content. However, there may be instances where UNCLASSIFIED data items become classified when associated with other UNCLASSIFIED or classified data items or where CONFIDENTIAL data items may become SECRET when associated with other CONFIDENTIAL or SECRET data items. For example, the frequency, equipment nomenclature, location, emission designation, and power data items may be UNCLASSIFIED as individual data items but become classified when grouped together or when subsets are grouped in various combinations. Therefore, since it is not cost-effective to try to identify the various combinations, all data items within the group must be given the same security classification. The security classification of data items and records with special handling instructions is normally based upon information derived from a source document such as a Security Classification Guide (SCG) or Operations Plan. The identification of this source document must be included in Data Item 014.

(d) Paragraph 3f(1) and Figure 1 show how to create UNCLASSIFIED records and explain the relationship of data item numbers. The following subparagraphs (1 and 2) refer to the data items shown in Figure 7.

1. The special handling code for the overall record is entered only in Data Item 005. Special handling code information is not entered anywhere else in a record except for those records not covered by an existing code. In such cases, free-text special handling instructions may be placed in Data Items 502 or 503.

2. The Description of Requirement (Data Item 502) provides a description of the assignment and is classified CONFIDENTIAL. Note that although this single data item is entered in paragraph form, the data item number and security classification appear on both lines.

(e) Declassification of the entire record (Figure 7) would require the entry of the present record security classification (**005. CK,DEOADR**), followed by the Security Classification Modification Data Item (**006. UE**), each classified data item with the classification changed to a “U” or a “blank”, and the other data items necessary for a modification as indicated in paragraph 3f(2). This modification would not change the data content, but would change all CONFIDENTIAL data items to UNCLASSIFIED and change the special handling restriction from **K** to **E**. See Figure 7.1 for an example transaction that would declassify the record in Figure 7.

C O N F I D E N T I A L<sup>a</sup>  
 DATA ITEMS NOT IDENTIFIED AS CLASSIFIED ARE UNCLASSIFIED  
 SUBJ: FREQUENCY ASSIGNMENT PROPOSAL - USAF (U)  
 005. CK,DEOADR  
 010. N  
 014. 19880311, PACAF OP PLAN 88-002  
 015. DATA ENTRIES NOT PRECEDED WITH (C) OR (S) ARE UNCLASSIFIED  
 102. AF 882345  
 110. K7624.5(7623)  
 113. FX  
 113/2. FX  
 113/3. FA  
 113/4. FA  
 114. 3K00J3E  
 114/2. (C) 800H00J2B  
 114/3. 3K00J3E  
 114/4. (C) 800H00J2B  
 115. (C) W400  
 115/2. (C) W400  
 115/3. (C) W20  
 115/4. (C) W20  
 130. 3HX  
 140. 19881012  
 144. Y  
 200. USAF  
 201. PACOM  
 202. PACAF  
 204. PACAF  
 205. 13AF  
 206. 3CSG  
 207. ANDERSEN  
 209. JGUM  
 209/2. JPAC  
 300. GUM  
 301. ANDERSEN  
 303. 134901N1453330E  
 340. (C) G,AN/URG99X  
 343. PC /09999  
 357. 9  
 362. S  
 363. H  
 400. HI,R01  
 400. GUM,R02  
 400. (C) PAC,R03  
 401. WAHIAWA,R01  
 401. FINEGAYAN,R02  
 401. (C) AIRCRAFT,R03  
 403. 212529N1580540W,R01  
 403. 133455N1445050E,R02  
 440. (C) G,AN/URG99X,R01  
 440. (C) G,AN/URG99X,R02  
 440. (C) G,AN/URG99X,R03  
 443. PC 9999,R01  
 443. PC 9999,R02  
 457. 9,R01  
 457. 9,R02  
 457. 9,R03  
 462. S,R01  
 462. S,R02  
 462. S,R03  
 463. H,R01  
 463. H,R02  
 463. H,R03  
 500. S141  
 502. (C) REQUIRED TO SUPPORT CONTINGENCY AND RECONNAISSANCE  
 502. (C) IN THE PACIFIC AREA.  
 511. AIR OPERATIONS  
 512. EXECUTIVE  
 513. (C) AIRBORNE COMMAND CENTER  
 701. T08  
 702. PACAF 88-0001  
 707. 253-11  
 803. JOE DOKES, DSN 335-1825

<sup>a</sup> Classified for illustration purposes only

Figure 7. Example of an older frequency proposal (or transaction) with classified and UNCLASSIFIED multiple transmitter and receiver data.

SUBJ: FREQUENCY ASSIGNMENT PROPOSAL - USAF (U)<sup>a</sup>  
 005. CK,DEOADR  
 006. UE  
 010. M  
 014. \$  
 015. \$  
 102. AF 882345  
 110. K7624.5(7623)  
 114/2. 800H00J2B  
 114/4. 800H00J2B  
 115. W400  
 115/2. W400  
 115/3. W20  
 115/4. W20  
 144. Y  
 300. GUM  
 301. ANDERSEN  
 340. G,AN/URG99X  
 400. PAC,R03  
 401. AIRCRAFT,R03  
 440. G,AN/URG99X,R01  
 440. G,AN/URG99X,R02  
 440. G,AN/URG99X,R03  
 502. \$  
 502. REQUIRED TO SUPPORT CONTINGENCY AND RECONNAISSANCE  
 502. IN THE PACIFIC AREA.  
 513. AIRBORNE COMMAND CENTER  
 701. T08  
 702. PACAF 00-084  
 803. SAM BROWN, DSN 335-1825

<sup>a</sup> Classified for illustration purposes only

Figure 7.1 Example of declassifying an existing record and each classified item in the record.

(f) Paragraph 3f(2) explains the format used to modify UNCLASSIFIED frequency assignments. Figure 8 shows how to modify the classified data items shown in Figure 7. The following subparagraphs (1 through 5) refer to the data items shown in Figure 8.

1. The complete record classification (Data Item 005) must be reentered. Any other security related items (Data Items 013-019) must also be reentered. Any changes or additions are made to Data Items 013-019 where necessary. These repeat entries are necessary so the modification transaction can be properly handled and protected until the changes are merged into the master database record.

C O N F I D E N T I A L<sup>a</sup>  
 DATA ITEMS NOT IDENTIFIED AS CLASSIFIED ARE UNCLASSIFIED  
 SUBJ: FIVE-YEAR REVIEW (U)  
 005. CK,DEOADR  
 006. CK,DEX4  
 010. M  
 014. 19960105, PACAF OP PLAN 96-001  
 015. DATA ENTRIES NOT PRECEDED WITH (C) OR (S) ARE UNCLASSIFIED  
 102. AF 882345  
 110. (C) K7624.5(7623)  
 115. (C) K1.5  
 115/2. W20  
 115/4. W20  
 144. O  
 300. J  
 301. TACHIKAWA  
 502. JOINT RESPONSIBILITY OF PACAF AND ACC.  
 701. T08  
 702. ANG 79-063  
 803. JOHN DOE DSN 335-1825

<sup>a</sup> Classified for illustration purposes only

Figure 8. Example of a frequency proposal (or transaction) used to modify a classified record.

2. The record classification instructions are modified by entering Data Item **006.CK,DEX4** and a new operations plan is reflected in the derivative classification authority (Data Item 014).

3. The first power data entry in Data Item 115 has been increased from W400 to K1.5. Note that the security classification had to be reentered. The second and fourth power data entries (Data Items 115/2 and 115/4) were downgraded to UNCLASSIFIED. Since there was no change to the third power data entry, no data was entered.

4. Data Item 502 may be entered by using the purge-and-replace technique as follows:

502. \$  
502. (paragraph classification) New Data  
502. (paragraph classification) New Data

**b. Processing Classified Frequency Assignment Transactions to NTIA.** The NTIA automated database processes SECRET data. The previous “Z” docket process has been discontinued. If an assignment contains TOP SECRET data, the submitting organization should omit such data and include a comment in the transaction, such as "additional information is not available without a higher clearance, contact the submitting agency." Use of data items shown in Table 1 will determine which organizations are to see the comment and in which database(s), if any, the comment is to be stored.

**Table 1 - Visibility of Comments**

Item	Seen by:	Where stored:
502	DoD only	FRRS database
503	All US government agencies	In both the GMF and the FRRS database
504	All US government agencies	Not stored in any database
801	DoD only	Not stored in any database

**c. Processing UNCLASSIFIED records that when aggregated together are classified CONFIDENTIAL.** The grouping together of all UNCLASSIFIED records in the FRRS with special handling codes “B” through “Z” makes the group CONFIDENTIAL.<sup>1</sup> Further, the grouping together of all of the Army or all of the Navy or all of the Air Force or all of the National Security Agency (NSA) UNCLASSIFIED FRRS records with special handling codes “B” through “Z”, also makes these groups of records classified CONFIDENTIAL. In order to identify these records when they are separated from the individual groups discussed above, a special handling code will be entered in each UNCLASSIFIED record that meets the criteria specified in Section 3 of the *DoD Frequency Assignment and Equipment Spectrum Certification Security Classification Guide*.

There are exemptions to the grouping of assignments together. These records must have a special handling code “A” (Unlimited Distribution). The exemptions are:

<sup>1</sup>MCEB-M-001-03, 12 Feb 2003, *DoD Frequency Assignment and Equipment Spectrum Certification Security Classification Guide* dated 1 Jan 2003.

“(1) Lists of UNCLASSIFIED frequency assignments ... to Government users that are intended to be made public (examples are travelers information stations, weather broadcast stations, certain stations in the maritime radionavigation and maritime mobile services and stations in the international broadcast services).

(2) Lists of aeronautical station frequencies under the purview of the Aeronautical Assignment Group (AAG) when used in the National Airspace System.

(3) Lists of UNCLASSIFIED frequency assignment ... records that operate on frequencies authorized to non-Government stations, where such use is necessary to intercommunicate with non-Government stations or for coordination with non-Government activities.

(4) Lists of UNCLASSIFIED frequency assignment ... records for which the release to the general public would have no significant impact to the overall defense<sup>2</sup> of the United States of America.”

## **5. PROCESSING TOP SECRET (TS) DATA.**

In addition to processing SECRET and CONFIDENTIAL data, the SPECTRUM XXI system is capable of processing, up to TS, FRRS data in the stand-alone or special network mode. TS level users are normally located in Sensitive Compartmented Information Facilities (SCIFs) and **WILL NOT** be exchanging data with other FRRS users via the **SECRET** level SIPRNET. TS users in SCIFs may exchange data with staff in other SCIFs; however, the data will be passed via networks capable of handling TS data.

## **6. SFAF DATA ITEMS USED IN THE SPECTRUM XXI ANALYSIS MODELS.**

SPECTRUM XXI has two analysis models that are used to analyze a background environment frequency record. It is important for users to understand what data is used and what combinations of data elements are required to complete a good analysis. The models are the Interference Power-Level Model and the Spectral Overlap Model. It is essential that the data items used for these models contain the best data available.

Each of the analysis models is described below. If there are any critical data item relationships used in the calculations, they will be listed as well. A default value notation (**DV**) follows the SFAF Data Item title if, in the absence of SFAF data, a user-defined preference can be used or one that is calculated in the software.

### **a. Interference Power-Level Model**

SPECTRUM XXI includes an Interference Power-Level Model that calculates potential conflicts between a proposed system and existing environmental systems. Potential conflicts can arise as

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<sup>2</sup> The determination of "no significant impact to overall US defense" should be made by the installation, center, or MAJCOM information security offices -- after consultation with offices of primary and collateral responsibility. The determination of no significant impact to overall US defense will result in the assignment of special handling code "A" to the computer record.

interference to or from the existing environment. Conflicts are declared when the calculated interference power level from a given transmitter exceeds the interference threshold level of the receiver. Below is a list of factors that are taken into consideration when calculating the interference power-level. Included are the associated SFAF data items that are used in these calculations.

**(1) Transmitter Power** -Transmitter power from the possible offending transmitter is the starting point of the interference calculations.

115. Transmitter Power **(DV)**

**(2) Transmitter and Receiver Antenna Names and Gain Calculations** -Antenna gains are added to the transmitter power and are an essential part of the interference calculation.

354. Tx Antenna Name

357. Tx Antenna Gain **(DV)**

454. Rx Antenna Name

457. Rx Antenna Gain **(DV)**

**(3) Effects of Off-Axis Antenna Gain Discrimination With Directional Antennas** – If the transmit antenna and the receive antenna are not mainbeam-to-mainbeam, the mutual antenna gain is reduced. The models that are used to calculate the off-axis gains can be found in the SPECTRUM XXI help file under the Antenna Coupling topic.

362. Tx Antenna Orientation **(DV)**

462. Rx Antenna Orientation **(DV)**

**(4) Antenna Polarization Mismatch Loss** – If the polarization of the transmitter and receiver are different, the mutual gain is reduced further by a default value contained in the software. This table can be found in the SPECTRUM XXI help file under the topic Polarization Loss.

363. Tx Antenna Polarization **(DV)**

463. Rx Antenna Polarization **(DV)**

**(5) Emission Spectrum and Receiver Selectability Characteristics** - The effects of the frequency, emission, and receiver selectivity (calculated) are considered in the interference calculation.

110. Frequency

113. Station Class

114. Emission Designator **(DV)**

115. Transmitter Power **(DV)**

346. Tx Pulse Duration

**(6) Propagation Path Loss** –Based upon the information available, SPECTRUM XXI will use either the Terrain Integrated Rough Earth Model (TIREM), the Spherical Earth Model (SEM), or the Free-Space Model to compute the propagation path loss. TIREM, which is

supported by a terrain database, is employed for all path-loss calculations in the 1-MHz to 20-GHz frequency range, provided that terrain data is available, and the stations are not mobile. SEM will automatically replace TIREM during an analysis for the following reasons: (1) if a radius of operation is associated with the transmitter and/or receiver station, (2) if the terrain data needed is absent, or (3) if there are less than three elevation points in the transmitter-receiver path profile. The free-space propagation formula is used outside the 1-MHz to 20-GHz range.

- 110. Frequency
- 303. Tx Antenna Coordinates
- 306. Tx Authorized Radius
- 359. Tx Antenna Feed Point (DV)
- 403. Rx Antenna Coordinates
- 406. Rx Authorized Radius
- 459. Rx Antenna Feed Point (DV)

**(7) Fixed and Mobile Logic** – During an interference analysis or electronic warfare analysis, certain fixed and mobile frequency records are processed through a set of logic cases and analysis records are created that will most accurately reflect how the system is deployed. This set of logic cases is referred to as the Fixed and Mobile Logic. Analysis records are created for each emission set (station class, emission, and power) in a record and for each receiver. Some frequency records contain a transmit station and a receive station with the implication that the receive station is transmitting back to the transmitting station on the same frequency. This implies that there is a receiver at the original transmit location. In these instances the software will create the analysis records for the implied stations.

Only FRRS, GMF, and international frequency records that are part of the SPECTRUM XXI domain or any record with Data Item 144. Y frequency records that have a frequency between 30 MHz and 1 GHz and have the following station classes are processed through the Fixed and Mobile Logic.

FX, FA., FB., FC., FL., and all Mobiles, specifically MA., ML., MO., and MS..

A frequency record that is processed through the Fixed and Mobile logic may be altered for the analysis depending upon values in the record. The following four parameters affect how the record is altered: the Station Class (SFAF item 113), the Radius (SFAF item 306/406), the IRAC record notes (SFAF item 500), and the Site Elevation (SFAF item 358/458). In addition, some of the parameters, such as antenna height, gain, polarization, and azimuth are also modified by the logic. For example, mobile stations with a station class of MO will have 10000 feet automatically added to the existing antenna height (SFAF item 359/459). Records with a station class of MA have 30000 feet automatically added to the existing antenna height. Records with a station class of ML have 2 meters automatically added to the antenna height. The Fixed and Mobile Logic topic in SPECTRUM XXI help contains all of the specifics.

- 113. Station Class
- 303. Tx Antenna Coordinates
- 306. Tx Authorized Radius
- 358. Tx Antenna Elevation
- 359. Tx Antenna Feed Point Height (DV)
- 403. Rx Antenna Coordinates
- 406. Rx Authorized Radius
- 458. Rx Antenna Elevation



- 459. Rx Antenna Feed Point Height (DV)
- 500. IRAC Notes

## **(8) Other Model Considerations**

**(a) Interference Flags** – During the import process and for some analyses, records may be tagged with an interference flag. There are eight possible flags – SNOTES, SPACE, AREA, COORDINATES, ERROR, USER, BAND and EXP. Explanations for these flags can be found in the Interference Flag topic of SPECTRUM XXI help. These records will **not** be analyzed but are flagged for manual analysis.

- 110. Frequency
- 113. Station Class
- 300. Tx State/Country
- 301. Tx Antenna Location
- 303. Tx Antenna Coordinates
- 306. Tx Authorized Radius
- 358. Tx Antenna Elevation
- 400. Rx State/Country
- 401. Rx Antenna Location
- 403. Rx Antenna Coordinates
- 406. Rx Authorized Radius
- 458. Rx Antenna Elevation
- 500. IRAC Notes

**(b) Start and End Dates** – For temporary records only, the start and end dates are used for nomination, interference analysis, and EW deconfliction.

- 140. Start Date (DV)
- 141. End Date (DV)

### **b. Spectral Overlap Model**

If, during an analysis, conflicts are declared for the entire set of proposed frequencies, SPECTRUM XXI will execute the Spectral Overlap Model. In this case, no path loss is calculated and no power levels are computed. The model will find unoccupied space within the spectrum in which to place the proposed system without overlapping occupied spectrum. Conflicts are declared when there is an overlap between the interfering transmitter emission bandwidth and the victim receiver passband. Spectral overlap is not executed if a single frequency is being analyzed for the proposed system. For a more detailed explanation refer to the Models Used to Calculate Interference topic in SPECTRUM XXI help.

- 110. Frequency
- 114. Emission

## APPENDIX A - GUIDE TO THE SFAF DATA ITEMS

1. All data items listed in this appendix are not required for every frequency assignment transaction. Required data items are based on type of radio service (i.e., radionavigation, aeronautical radionavigation, space, etc.). Data item numbers not listed are reserved for future use. Data Items 982 through 999 are used only in tactical operations.
2. Data items marked with footnote<sup>3</sup> are reserved for use by headquarters of the Army, Navy, Air Force, Defense Information Systems Agency (DISA), NSA, and COCOMs. Agencies may authorize use of these data items by subordinates, as desired.
3. The information presented for each data item is formatted as follows: Each data item starts with the data item name and number in bold print. The second line begins with the maximum number of characters (including spaces) that can be entered for that data element. The maximum number of characters does not include the data item number itself, the slash (if present), the occurrence identifier, the period and space following the data item number, the security classification indicator (U, C, S, or T) when present, the space following the security classification indicator or the receiver location identifier. The maximum number of characters is followed by the maximum number of occurrences allowed to be entered in a single database record or at each receiver location in a single database record.
4. Since many data items are recognized by NTIA, the GMF tag is included for reference purposes. The **Input Requirement:** contains the rules for submission and any examples needed for clarification of the rules of submission.
5. Table A1 lists the SFAF data item number, title, SPECTRUM XXI tag, the data element maximum input length, the maximum number of occurrences permitted in a database record and also indicates whether or not the data item is forwarded to NTIA. In those few instances where the number of characters sent to NTIA is less than the input length, the number of characters sent to NTIA is included in the To IRAC column.

Table A1 Summary of Data Item Specifications						
SFAF Data Item Number	Title	SPECTRUM XXI Tags	Maximum Input Lengths	Maximum Occurrences	To IRAC <sup>a</sup>	GMF Tags
ADMINISTRATIVE DATA						
005	Security Classification	CLA,CDD,FOI <sup>m</sup>	2,10	1	Y	CLA, CDD, FOI <sup>c</sup>
006	Security Classification Modification	CLA,CDD,FOI <sup>m</sup>	2,10	1	Y	CLA, CDD, FOI <sup>c</sup>
007 <sup>h</sup>	Missing Data Indicator	MSD	1	1	Y	MSD
010	Type of Action	TYP	1	1	Y	TYP
013	Declassification Instruction Comment	DIC	35	1	Y	*DIC
014	Derivative Classification Authority	CLF	8,60	10	Y35	*CLF <sup>b</sup>
015	Unclassified Data Fields	CLU	72	1	Y35	*CLU <sup>b</sup>
016	Extended Declassification Date	CDE	35	1	Y	*CDE <sup>b</sup>
017	Downgrading Instructions	DNG	1,8	1	Y	*AGN,DNG <sup>b</sup>
018	Original Classification Authority	OCA	60	1	Y35	*CLA <sup>b</sup>
019	Reason for Classification	CLR	35	1	Y	*CLR <sup>b</sup>
020	Proposal References		64	10	N	
102	Agency Serial Number	SER	10	1	Y	SER
103	IRAC Docket Number	AUS	8	10	N <sup>i</sup>	AUS
105	List Serial Number	LSN	10	1	Y	LSR
106 <sup>f</sup>	Serial Replaced, Delete Date	SRS,SEX	10,8	1	Y	SRS,SEX
107	Authorization Date	AUD	8	1	N <sup>i</sup>	AUD
108	Docket Numbers of Older Authorizations	DOC	35	30	Y	*DOC <sup>b</sup>
EMISSION CHARACTERISTICS						
110 <sup>p</sup>	Frequency(ies)	FRQ,FRU	11,11-11, 11(11)	1	Y	FRQ,*FRB <sup>b</sup>
111	Excluded Frequency Band	FBE	23	30	Y	*FBE <sup>b</sup>
112	Frequency Separation Criteria		35	1	N	
113 <sup>q</sup>	Station Class	STC	4	20	Y	STC
114 <sup>q</sup>	Emission Designator	EMS	11	20	Y	EMS
115 <sup>q</sup>	Transmitter Power	PWR	9	20	Y	PWR
116	Power Type		1	20	N	
117	Effective Radiated Power		6	20	N	
118 <sup>j</sup>	Power/ERP Augmentation		1	20	N	
TIME/DATE INFORMATION						
130	Time	TME	4	1	Y	TME
131	Percent Time		2	1	N	
140 <sup>q</sup>	Required Date		8	1	N	
141 <sup>q</sup>	Expiration Date	EXD	8	1	Y	EXD
142	Review Date		8	1	N	
143	Revision Date	RVD	8	1	N <sup>i</sup>	RVD
144	Approval Authority Indicator		1	1	N	
145	ITU BR Registration		1,20	1	N	
146	DCS Trunk ID		6	20	N	
147	Joint Agencies	JNT	4	20	Y	*JNT <sup>b</sup>

Table A1 Summary of Data Item Specifications						
SFAF Data Item Number	Title	SPECTRUM XXI Tags	Maximum Input Lengths	Maximum Occurrences	To IRAC <sup>a</sup>	GMF Tags
151	Coordination Indicator	ICI	1	1	Y	ICI
152	Coordination Data	CAN,MEX,US A	1,35	30	Y	*CAN <sup>b</sup> *MEX <sup>b</sup>
ORGANIZATIONAL INFORMATION						
200	Agency		6	1	N	
201	Unified Command		8	10	N	
202	Unified Command Service		8	10	N	
203	Bureau	BUR	4	1	Y <sup>c</sup>	BUR
204	Command		18	1	N	
205	Subcommand		18	1	N	
206	Installation Frequency Manager		18	1	N	
207	Operating Unit		18	10	N	
208	User Net/Code	NET	6	1	Y5 <sup>d</sup>	NET
209	Area AFC/DoD AFC/ Other Organizations		18	10	N	
TRANSMITTER LOCATION DATA						
300 <sup>p</sup>	State/Country	XSC	4	1	Y	XSC
301 <sup>p</sup>	Antenna Location	XAL	24	1	Y	XAL
302	Station Control	XRC	18	1	Y8	XRC
303 <sup>p</sup>	Antenna Coordinates	XLA XLG	15	1	Y	XLA XLG
304	Call Sign	XCL	10	1	Y8	XCL
306 <sup>p</sup>	Authorized Radius	XRD	5	1	Y	*RAD <sup>b</sup>
SPACE STATIONS						
315	Equatorial Inclination Angle	XIN	4	1	Y	*ORB <sup>b</sup>
316	Apogee	XAE	5	1	Y	*ORB <sup>b</sup>
317	Perigee	XPE	5	1	Y	*ORB <sup>b</sup>
318	Period of Orbit	XPD	7	1	Y	*ORB <sup>b</sup>
319	Number of Satellites	XNR	2	1	Y	*ORB <sup>b</sup>
321	Power Density	SPD	4	1	Y	SPD
TRANSMITTER EQUIPMENT						
340 <sup>p</sup>	Equipment Nomenclature	XEQ	1,18	10	Y	*EQT <sup>b</sup>
341	Number of Stations, System Name	NTT,NAM	5,29	3	Y	*NRM <sup>b</sup>
342 <sup>j</sup>	Aircraft Nautical Mile Value	XNM	4	1	N	*RAD <sup>b</sup>
343	Equipment Certification Identification Number		15	10	Y	*AGN,JFA <sup>b</sup>
344 <sup>h</sup>	Off-the-shelf Equipment	EQS	6	10	Y	*EQS <sup>b</sup>
345	Radar Tunability	TUN	2	1	Y	*EQT <sup>b</sup>
346	Pulse Duration	PDD	9, 9-9	30	Y	*EQT <sup>b</sup>
347	Pulse Repetition Rate	PRR	9, 9-9	30	Y	*PRR <sup>b</sup>
348	Intermediate Frequency		11	1	N	
349	Sidelobe Suppression		1	1	N	
TRANSMITTER ANTENNA DATA						
354	Antenna Name	XAT	10	10	Y	XAD
355	Antenna Nomenclature	XAK	18	10	Y	*EQT <sup>b</sup>
356	Antenna Structure Height		3	10	N	
357 <sup>q</sup>	Antenna Gain	XAG	4	10	Y	XAD,*EGN <sup>b</sup> ,*SGN <sup>b</sup>

Table A1 Summary of Data Item Specifications						
SFAF Data Item Number	Title	SPECTRUM XXI Tags	Maximum Input Lengths	Maximum Occurrences	To IRAC <sup>a</sup>	GMF Tags
358 <sup>p</sup>	Antenna Elevation	XSE	5	10	Y	XAD
359 <sup>q</sup>	Antenna Feedpoint Height	XAH	5	10	Y	XAD
360	Antenna Horizontal Beamwidth	XBW	4	10	Y	XAD,*EBW <sup>b</sup> ,*SBW <sup>b</sup>
361	Antenna Vertical Beamwidth		3	10	N	
362 <sup>q</sup>	Antenna Orientation	XAZ	3,3-3	10	Y	XAZ, XAD
363 <sup>q</sup>	Antenna Polarization	XAP	1	10	Y	XAP
373 <sup>j</sup>	JSC Area Code		1	1	N	
374	ITU Region		1	1	N	
RECEIVER LOCATION DATA (Maximum receiver locations allowed: 30) <sup>k</sup>						
400 <sup>p</sup>	State/Country	RSC	4	1	Y	RSC
401 <sup>p</sup>	Antenna Location	RAL	24	1	Y	RAL
402	Receiver Control	RRC	18	1	Y8	RRC
403 <sup>p</sup>	Antenna Coordinates	RLA RLG	15	1	Y	RLA RLG
404	Call Sign	RCL	10	1	Y8	ACL
406 <sup>p</sup>	Authorized Radius	RRD	4	1	Y	*RAD <sup>b</sup>
407 <sup>j</sup>	Path Length		5	1	N	
408	Repeater Indicator	RPT	1	1	Y	*RPT <sup>b</sup>
SPACE STATIONS (Maximum receiver space stations allowed: 30) <sup>k</sup>						
415	Equatorial Inclination Angle	RIN	4	1	Y	*ORB <sup>b</sup>
416	Apogee	RAE	5	1	Y	*ORB <sup>b</sup>
417	Perigee	RPE	5	1	Y	*ORB <sup>b</sup>
418	Period of Orbit	RPD	7	1	Y	*ORB <sup>b</sup>
419	Number of Satellites	RNR	2	1	Y	*ORB <sup>b</sup>
RECEIVER EQUIPMENT (Maximum receiver locations allowed: 30) <sup>k</sup>						
440	Equipment Nomenclature	REQ	1,18	10	Y	*EQR <sup>b</sup>
442	Aircraft Nautical Mile Value	RNM	4	1	N <sup>i</sup>	*RAD <sup>b</sup>
443	Equipment Certification Identification Number		15	10	N	
RECEIVER ANTENNA DATA (Maximum receiver locations allowed: 30) <sup>k</sup>						
454	Antenna Name	RAT	10	10	Y	RAD
455	Antenna Nomenclature	RAK	18	10	Y	*EQR <sup>b</sup>
456	Antenna Structure Height		3	10	N	
457 <sup>q</sup>	Antenna Gain	RAG	4	10	Y	RAD,*SGN <sup>b</sup> ,*EGN <sup>b</sup>
458 <sup>p</sup>	Antenna Elevation	RSE	5	10	Y	RAD
459 <sup>q</sup>	Antenna Feedpoint Height	RAH	5	10	Y	RAD
460	Antenna Horizontal Beamwidth	RBW	4	10	Y	RAD,*EBW <sup>b</sup> ,*SBW <sup>b</sup>
461	Antenna Vertical Beamwidth		3	10	N	
462 <sup>q</sup>	Antenna Orientation	RAZ,RAA	3 3,3 3,3-3	10	Y	RAZ,RAD
463 <sup>q</sup>	Antenna Polarization	RAP	1	10	Y	RAP
470	Space Station Noise Temperature	SNT	4	10	N	
471	Earth Station System Noise Temperature	RNT	4	10	N	
472	Equivalent Satellite Link Noise	ENT	4	10	N	

Table A1 Summary of Data Item Specifications						
SFAF Data Item Number	Title	SPECTRUM XXI Tags	Maximum Input Lengths	Maximum Occurrences	To IRAC <sup>a</sup>	GMF Tags
473	Temperature JSC Area Code		1	1	N	
SUPPLEMENTARY DETAILS						
500	IRAC Notes	NTS	4	10	Y	NTS
501	Notes free-text Comments	NOT	35	30	Y	*NTS <sup>b</sup>
502	Description of Requirement	GEN	1440	1	N	
503	Agency Free-text Comments	AGN	35	30	Y	*AGN <sup>b</sup>
504	FAS Agenda or OUS&P Comments	FAS	72	5	Y	FAS
505	NATO Pooled Frequency Code Number		5	1	N	
506	Paired Frequency	PRD	11,10,12	30	Y	*PRD <sup>b</sup>
511	Major Function Identifier	MFI	30	1	Y	*MFI <sup>b</sup>
512	Intermediate Function Identifier	IFI	30	1	Y	*IFI <sup>b</sup>
513	Detailed Function Identifier	DFI	30	5	Y	*DFI <sup>b</sup>
520	Supplementary Details	SUP	1080	1	Y	SUP
521	Transition and Narrow Band Planning Data	TRN	8,13	1	Y	*TRN <sup>b</sup>
530	Authorized Areas	XAR,RAR,ARB	3,35	30	Y	*ART <sup>b</sup> , *ARR <sup>b</sup> , *ARB <sup>b</sup>
531	Authorized States	AST	3,35	6	Y	*LST <sup>b</sup> ,*LSR <sup>b</sup> ,*LSB <sup>b</sup> ,*EST <sup>b</sup> , *T <sup>b</sup> ,*ESR <sup>b</sup> , *ESB <sup>b</sup>
OTHER ASSIGNMENT IDENTIFIERS						
701	Frequency Action Officer		3	1	Y <sup>l</sup>	*AGN,FAO <sup>b</sup>
702	Control/Request Number		15	1	Y <sup>o</sup>	*AGN,CNO <sup>b</sup>
704	Type of Service		1	1	Y	*AGN,TOS <sup>b</sup>
707	PACOM Complement/ FMSC Function Number		8	20	N	
710	Host Country Docket Number		35	10	N	
711	Aeronautical Service Range and Height		6	1	N	
715	Transmitter FMSC MRFL Number		14	1	N	
716	Usage Code		1	1	N	
ADDITIONAL INFORMATION						
801 <sup>f</sup>	Coordination Data/Remarks		60	20	N	
803	Requestor Data	POC	60	1	N	
804	Tuning Range/Tuning Increments		60	30	N	
805 <sup>f</sup>	Date Response Required		8	1	N	
806 <sup>f</sup>	Indication if Host Nominations are Acceptable		60	10	N	
807 <sup>f</sup>	Frequencies to be Deleted		60	10	N	
901	Record Status		1	1	N	
903	Proposal Status	CPS	4	20	N	
904	Status Date	STD	8	20	N	
905 <sup>g</sup>	Proposal Date Time Group		14	1	N	
906 <sup>g</sup>	Originator		66	1	N	

Table A1 Summary of Data Item Specifications						
SFAF Data Item Number	Title	SPECTRUM XXI Tags	Maximum Input Lengths	Maximum Occurrences	To IRAC <sup>a</sup>	GMF Tags
907	Validation Status		1	1	N	
910	Exercise Project		20	1	N	
911 <sup>j</sup>	Date of Last Transaction	DAT	8	1	N	
924	Data Source Indicator		4	1	N	
926 <sup>j</sup>	Semi-Bandwidth		12	1	N	
927 <sup>j</sup>	Date of Entry		8	1	N	
928 <sup>j</sup>	Date of Receipt		8	1	N	
950	PC ID	PCI	10	1	N	
952 <sup>j</sup>	IRAC Security Classification		1	1	Y	CLA
953 <sup>j</sup>	IRAC Declassification Date		10	1	Y	CDD
956	Agency Action Number	ACN	10	1	Y	ACN
957 <sup>j</sup>	Review Year	RYP	4	1	Y <sup>h</sup>	RYP
958 <sup>j</sup>	Routine Agenda Item	RTN	1	1	Y	RTN
959 <sup>j</sup>	Circuit Remarks	REM	40	30	N	REM
963	FCC File Number	FLN	22	1	Y <sup>h</sup>	*FLN <sup>b</sup>
964 <sup>j</sup>	Tx Aircraft Altitude		3	10	N	XAD
965 <sup>j</sup>	Rx Aircraft Altitude		3	10	N	RAD
982 <sup>f</sup>	JCEOI Line Number		5	1	N	
983 <sup>f</sup>	JCEOI Master Net List Name		16	1	N	
984 <sup>f</sup>	Net Frequency Range		11-11	1	N	
985 <sup>f</sup>	Joint Restricted Frequency List (JRFL) Protection Code		1, 1/2	1	N	
986 <sup>f</sup>	Net Tactical Call Word		15	1	N	
987 <sup>f</sup>	Net Tactical Call Sign		3	1	N	
988 <sup>f</sup>	Net Tactical Air Designator (TAD)		5	1	N	
989 <sup>f</sup>	Net Color Word		16	1	N	
990 <sup>f</sup>	Net Color Number		2	1	N	
991 <sup>f</sup>	Net Restoral Priority		3	1	N	
992 <sup>f</sup>	Net Push Number		3	1	N	
993 <sup>f</sup>	Band Usage		1	1	N	
994 <sup>f</sup>	Check Sum		1	1	N	
995 <sup>f</sup>	COMSEC Keymat		15	1	N	
996 <sup>f</sup>	Circuit Type, Line Item, Group Category		8	1	N	
997 <sup>f</sup>	JCEOI Special Net Instructions		63	1	N	
998 <sup>f</sup>	Net Notes		3	1	N	
999 <sup>f</sup>	Guard Requirements		20	50	N	

Table A1 Summary of Data Item Specifications						
SFAF Data Item Number	Title	SPECTRUM XXI Tags	Maximum Input Lengths	Maximum Occurrences	To IRAC <sup>a</sup>	GMF Tags
<p>a Y = Yes, N = No, a number = the number of characters sent to NTIA (FAS of the IRAC).</p> <p>b This data item is stored in the GMF Circuit Remarks. Circuit Remarks are limited to 30 occurrences.</p> <p>c A special handling code in the second character of the security classification is sent to NTIA as FOI X</p> <p>d Army and NSA only.</p> <p>e Army only.</p> <p>f Not stored in the FRRS central computer facility (CCF) database.</p> <p>g For distributed computer facility (DCF) use only.</p> <p>h Not used by DoD</p> <p>i Computer-generated by NTIA (IRAC).</p> <p>j Computer-generated by JSC.</p> <p>k A maximum of 30 receiver locations are allowed in a frequency assignment record. The number of occurrences in items 400 - 473 are related to the number of occurrences that are permitted at each receiver site. For example, only one item 400 is permitted at a site, while 10 equipment nomenclatures are permitted at any single receiver site. (In other items, the maximum number of occurrences relate to the number of occurrences permitted in a complete record.)</p> <p>l Army, Navy, and Air Force only.</p> <p>m If data sent to NTIA is different from the data entered, see SFAF Data Items 952 and 953.</p> <p>n *USA is a GMF output field used in Canadian records.</p> <p>o Navy and Air Force only.</p> <p>p This data item is used in frequency nomination or interference analysis. Failure to provide data for this item will result in a possible reduction of analysis accuracy.</p> <p>q This data item is used in frequency nomination or interference analysis. Failure to provide data for this item will result in a default value being used with a possible reduction of analysis accuracy.</p>						

Footnotes:

<sup>1</sup> *MCEB-M-001-03, 12 Feb 2003, DoD Frequency Assignment and Equipment Spectrum Certification Security Classification Guide dated 1 Jan 2003.*

<sup>2</sup> The determination of "no significant impact to overall US defense" should be made by the installation, center, or MAJCOM information security offices -- after consultation with offices of primary and collateral responsibility. The determination of no significant impact to overall US defense will result in the assignment of special handling code "A" to the computer record.

<sup>3</sup> This data item is reserved for use by MILDEP, COCOM, and Agency frequency management offices or subordinate organizations when its use has been delegated to lower levels.



## ADMINISTRATIVE DATA

Administrative Data - Data Items 005, 006, 010, 020, and 102 through 108 provide data to initiate the processing of frequency assignments.

### **Security Classification .....005**

2,10 characters - 1 occurrence

Submitted to IRAC: yes                      GMF tag: FOI (for Special Handling Codes),  
CDD (CLA, if any IRAC reportable  
data item is classified.)

**Description:** Data Item 005 has two parts. Part one contains a 2-letter designator representing the security classification of the record and the record special handling instructions. The second part of the item contains a 10-character field containing the record declassification instructions. The record declassification instructions must always be entered if the first character of the security classification is a “C,” “S,” or “T.”

### **Classification Codes - First Character**

#### **Code    Description**

**U** -    UNCLASSIFIED  
**C** -    CONFIDENTIAL  
**S** -    SECRET  
**T** -    TOP SECRET

### **Special Handling Codes - Second Character**

A Special Handling Code is required in all frequency assignment records.

#### **Code    Description**

**A** - Approved for public release; distribution is unlimited (DoD Directive 5230.24).

**B** - Releasable to soil country and the North Atlantic Treaty Organization (NATO); otherwise, not releasable outside the US Government in accordance with (IAW) Section 552 (b)(1) of Title 5 of the US Code.

**C** - Releasable to soil country and coalition operation organizations; otherwise, not releasable outside the US Government in accordance with (IAW) Section 552 (b)(1) of Title 5 of the US Code.

**E** - Not releasable outside the US Government IAW Section 552 (b)(1) of Title 5 of the US Code.

**F** - Not releasable to foreign nationals and not releasable outside the US Government IAW Section 552 (b)(1) of Title 5 of the US Code.

**H** - Releasable to soil country only; otherwise, not releasable outside the US Government IAW Section 552 (b)(1) of Title 5 of the US Code.

- J** - Contingency Assignment - The record contains unified commander comments only; not releasable to foreign nationals unless formally coordinated; otherwise, not releasable outside the US Government IAW Section 552 (b)(1) of Title 5 of the US Code.
- K** - Permanent assignment. Available for contingency use within the theater after coordination with and approval of the cognizant unified commander - releasable to soil nation; otherwise, not releasable outside the US Government IAW Section 552 (b)(1) of Title 5 of the US Code.
- N** - Releasable to NATO; otherwise, not releasable outside the US Government IAW Section 552 (b)(1) of Title 5 of the US Code.
- P** - Proprietary; otherwise, not releasable outside the US Government IAW Section 552 (b)(1) of Title 5 of the US Code.

The following special handling codes are used within TOP SECRET databases and are not to be used within the FRRS worldwide SIPRNET database system:

#### **Code Description**

- L** - Sensitive Compartmented Information (SCI); otherwise, not releasable outside the US Government IAW Section 552 (b)(1) of Title 5 of the US Code.
- Q** - Special Category (SPECAT); otherwise, not releasable outside the US Government IAW Section 552 (b)(1) of Title 5 of the US Code.
- R** - Special Access Required (SAR); otherwise, not releasable outside the US Government IAW Section 552 (b)(1) of Title 5 of the US Code.

#### **Declassification Instructions**

For TOP SECRET, SECRET, or CONFIDENTIAL records, follow the security classification with a comma, and the appropriate declassification instruction, using one of the following formats:

**DEYYYYMMDD** - Declassify on: Enter **DE** followed by the year (**YYYY**), the month (**MM**) and the day of the month (**DD**) of the declassification date. The date must be equal to or less than 25 years from the date of the derivative classification source or the date of the record if the record classification is determined by an original classification authority. See Data Items 018 and 019 below.

**DEVENT** - Declassify on event. When a record is to be declassified on an event, Data Item 005. contains "**DEVENT**" and a data entry is required in Data Item 013, Declassification Instruction Comment.

#### **Examples:**

005. SE,DEVENT

013. DECLASSIFY AFTER MISSILE LAUNCH

**DEOADR** - Declassify on: Originating Agency Determination Required. If DEOADR is used in a record, an entry is required in Data Item 014. (Note the term **DEOADR** is a derivative declassification notation and is no longer a valid term if the source document is over 5 years old or if the date of the source document is greater than

14 Oct 2000. Operational users creating new classified assignments based upon documents not meeting the above date test should contact the originator of the original classified document being used as a derivative classification source to obtain declassification instructions that are in accordance with the current requirements of E.O. 12958 dated 13 Oct 1995 as amended by E.O. 13292 dated 28 Mar 2003. Finally, if the operational user cannot find an originator to update the derivative classification source, enter a date in Data Item 016 that is 25 years after the original classification date<sup>3</sup> if known or a date 25 years from the date of the derivative classification source document.)

**Examples:**

005. UE

005. CB,DE20051130

005. SE,DEOADR

**DEXnnnnnnnn** - Declassify on: Exempt from automatic declassification. The letters “nnnnnnnn” indicate one or more reasons (see list below) why TOP SECRET, SECRET, and CONFIDENTIAL records cannot be automatically declassified. Enter **DEX** followed by one to seven numbers, in numerical order, applicable to the appropriate reason(s) listed below. **(This type of formatted entry cannot be used if Data Items 018 and 019 are used as the authoritative source for classifying data in the record.)**

**Code Description**

- 1- Reveal an intelligence source, method, or activity, or a cryptologic system or activity.
- 2- Reveal information that would assist in the development or use of weapons of mass destruction.
- 3- Reveal information that would impair the development or use of technology within a US weapons system.
- 4- Reveal US military plans or national security emergency preparedness plans.
- 5- Reveal foreign government information.
- 6- Damage relations between the US and a foreign government, reveal a CONFIDENTIAL source, or seriously undermine diplomatic activities that are reasonably expected to be ongoing for a period greater than ten years.
- 7- Impair the ability of responsible US government officials to protect the president, the vice president, and other individuals for whom protection services, in the interest of national security, are authorized.
- 8- Violate a statute, treaty or international agreement.

**Examples:**

005. SH,DEX1 (one reason for exemption from automatic declassification)

005. CJ,DEX134 (three reasons for exemption from automatic declassification)

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<sup>3</sup> The “original classification date” is the date an original classification authority determined that this specific information was classified Confidential, Secret, or Top Secret.

(Note the terms **DEX1** through **DEX8** are a derivative declassification notations and are no longer valid formats to be used if the derivative source document has a date greater than 21 September 2003. Operational users creating new classified records (assignments) based upon documents not meeting the above date test should contact the originator of the original classified document being used as a derivative classification source to obtain declassification instructions that are in accordance with the current requirements of E.O. 12958 dated 13 Oct 1995 as amended by E.O. 13292 dated 28 Mar 2003. Finally, if the operational user cannot find an originator to update the derivative classification source, enter a date in Data Item 016 that is 25 years after the original classification date if known or a date 25 years from the date of the derivative classification source document.)

**DE25Xn -** Declassify on: Permanently valuable information (as defined by the national archivist) is exempt from automatic declassification 25 years beyond the original classification date. (The letter "n" indicates why a TOP SECRET, SECRET, or CONFIDENTIAL record cannot be automatically declassified 25 years after the original classification date.) Enter **DE25X** followed by a number "n" from the applicable paragraph below. Note: When the value of "n" is greater than "1", an entry is required in Data Item 013 or Data Item 016. **(This type of formatted entry cannot be used if Data Items 018 and 019 are used as the authoritative source for classifying data in the record. This type of formatted entry cannot be used unless the specific classified information included in this record has been approved through the Interagency Security Appeals Panel (ISCAP) process. Approved specific information is normally entered in a Security Classification Guide (SCG) which must be documented in Data Item 014. Service level security offices also maintain a list of ISCAP approved information categories.)**

#### **Code Description**

- 1- Reveal the identity of a CONFIDENTIAL human source, or reveal information about the application of an intelligence source or method, or reveal the identity of a human intelligence source when the unauthorized disclosure of that source would clearly and demonstrably damage the national security interests of the US.
- 2- Reveal information that would assist in the development or use of weapons of mass destruction.
- 3- Reveal information that would impair US cryptologic systems or activities.
- 4- Reveal information that would impair the application of state-of-the-art technology within a US weapon system.
- 5- Reveal actual US military war plans that remain in effect.
- 6- Reveal information that would seriously and demonstrably impair relations between the US and a foreign government, or seriously and demonstrably undermine ongoing diplomatic activities of the US.
- 7- Reveal information that would clearly and demonstrably impair the current ability of US Government officials to protect the president, vice president, and other officials for whom protection services, in the interest of national security, are authorized.

- 8- Reveal information that would seriously and demonstrably impair current national security emergency preparedness plans.
- 9- Reveal information that would violate a statute, treaty, or international agreement.

**Example:**

005. SH,DE25X5

**Input Requirement:** Data Item 005 is always required. Enter the overall security classification of the frequency proposal or assignment and the appropriate special handling code. This data item cannot be deleted from a record and can only be changed by use of Data Item 006.

**Security Classification Modification .....006**

2,10 characters - 1 occurrence

Submitted to IRAC: yes                      GMF tag: See Data Item 005.

**Description:** Data Item 006 specifies the replacement value for Data Item 005, Security Classification. The acceptable data entries for this data item are the same as Data Item 005.

**Input Requirement:** If the record's security classification, special handling code, or declassification instructions are to be changed, enter the complete replacement Security Classification and make appropriate data item classification code changes to the individual data items. (Data Item 006 must always be preceded by Data Item 005 to show the record's **existing** security classification.)

**Examples:**

006. UE

006. CB,DEOADR

006. SB,DE19980715

**Missing Data Indicator .....007**

1 character - 1 occurrence

Submitted to IRAC: yes                      GMF tag: MSD

**Description:** The indicator that, in accordance with the NTIA Manual of Regulations and Procedures for Federal Radio Frequency Management, one or more of the required data elements for the frequency authorization or frequency application have not been entered.

**Input Requirement:** Not used by DoD. Non-DoD organizations enter the letter Z to indicate that one or more of the required data elements has not been included in the automated record. (Note, the complete record must be separately submitted to NTIA as a paper document.)

**Example:**

007. Z

**Type of Action .....010**

1 character - 1 occurrence

Submitted to IRAC: yes            GMF tag: TYP

**Description:** Data Item 010 indicates the type of action required to process the frequency assignment transaction.

**Input Requirement:** Data Item 010 is always required and must contain one of the type of action codes described below.

**Code    Description**

**A - Administrative Modification.** This action is similar to a Modification (M) action; however, it is used to make three specific types of changes:

- a.Changes due to typographical errors in the authorizing document
- b. Changes in administrative data items (e.g., 200 series)
- c.Mass changes required for compliance with international, national, or DoD rules and regulations.

The review date (Data Item 142) will not be automatically changed if an Administrative Modification action is used. Note: If the record is reportable to NTIA Data Item 144 must be changed to N. Only non IRAC reportable fields may be administratively modified.

**D - Delete.** Used to remove an existing record from a database.

**E - Expired.** A computer-generated code used by NTIA to remove an expired record from the GMF and its matching record from the FRRS. (In the FRRS database all expired records are sent to the history file.)

**F - Notification.** Used to notify the activation of a frequency for a particular station or stations under the authority of a group assignment. Data Item 105 must also be specified.

**M - Modification.** Used to add, substitute, or remove one or more data items in an existing record.

**N - New.** Used to create a new record and place it in the appropriate online database.

**R - Renewal.** Used to extend the expiration date of a temporary assignment. Other data may be changed as necessary.

**Example:**

010. M

**Declassification Instruction Comment.....013**

35 characters - 1 occurrence

Submitted to IRAC: yes            GMF tag: \*DIC

**Description:** This entry describes an event, when after its occurrence, the frequency assignment record Classification will be changed to UNCLASSIFIED.

**Input Requirement:** This field must be filled when the DECLASSIFICATION INSTRUCTIONS in Data Item 005. contain "**DEVENT**". It may be used when the declassification instructions in Data Item 005 are equal to DE25X2 through DE25X9 if the final declassification is based upon an event and there is no entry in Data Item 016.

**Example:**

013. DECLASSIFY AFTER MISSILE LAUNCH

**Derivative Classification Authority.....014**

8,60\* characters - 10 occurrences

Submitted to IRAC: yes            GMF tag: \*CLF

**Description:** This data item indicates the date, title, and publishing organization of the source document from which one or more TOP SECRET, SECRET, or CONFIDENTIAL data entries in the record were derived.

**Input Requirement:** This data entry is required when the DECLASSIFICATION INSTRUCTIONS in Data Item 005 contain "DEOADR" or "DEX1" through "DEX8" when the classification of data is "Derived From" other sources such as security classification guides, J-12 documents, or operations plans. The data entry will be the source date (YYYYMMDD), followed by a comma, and followed by the title and the publishing organization. An entry in Data Item 018 is not required when Data Item 014 is used. Whenever multiple sources are entered in this data item, the first entry will be the date of the "most restrictive source" document, a comma, and the words "MULTIPLE SOURCES". The declassification instruction from most restrictive source must be entered in the declassification instruction part of Data Item 005.

**Examples:**

014. 19930815, B-1B SCG, OC-ALC/LAB            (a single example)

014. 19870614, MULTIPLE SOURCES            (a two document example)

014/2. 19921122, OPLAN 2104, PACOM

014/3. 19870614, J-12 5502/4, USAFFMA

\* Data in records where SFAF Data Item 144 equals "Y" cannot exceed 35 characters until NTIA lengthens the GMF field.

**Unclassified Data Fields .....015**

72\* characters - 1 occurrence

Submitted to IRAC: yes            GMF tag: \*CLU

**Description:** This data item alerts the reader of a printed or automated display record that there are instances when UNCLASSIFIED data entries are not preceded by the entry (U) in a CONFIDENTIAL, SECRET, or TOP SECRET assignment.

**Input Requirement:** This data item is required for all classified records. Note, even though all data entries in a record are classified, there are UNCLASSIFIED data entries, computer-generated by the JSC.

**Example A:** (for use in CONFIDENTIAL and SECRET FRRS records)  
015. DATA ENTRIES NOT PRECEDED WITH (C) OR (S) ARE UNCLASSIFIED

**Example B:** (for use only in TOP SECRET stand-alone operations)  
015. DATA ENTRIES NOT PRECEDED WITH (C), (S) OR (T) ARE UNCLASSIFIED

\* Data in records where SFAF Data Item 144 equals "Y" cannot exceed 35 characters until NTIA lengthens the GMF field. The current GMF data entry is automatically converted from the above SFAF data entry to the standard GMF entry: REMnn \*CLU,ALL DATA NOT LISTED IN \*CLC OR \*CLS

**Extended Declassification Date ..... 016**

35 characters - 1 occurrence

Submitted to IRAC: yes GMF tag: \*CDE

**Description:** Data Item 016 contains a declassification date (YYYYMMDD) that is beyond 25 years from the date of original classification.

**Input Requirement:** Data Item 016 is required when Data Item 005 contains DE25Xn, where the value of "n" is greater than 1 and a declassification event is not entered in Data Item 013.

**Example:**  
016. 20351231 (for Dec 31, 2035)

**Downgrading Instructions.....017**

1,8 characters - 1 occurrence

Submitted to IRAC: yes GMF tag: \*AGN,DNG-

**Description:** This data entry is a two-part field. The entry contains the new classification level ("C" for Confidential or "S" for Secret), followed by a comma and the date (YYYYMMDD) the record is to be downgraded from SECRET to CONFIDENTIAL or from TOP SECRET to either SECRET or CONFIDENTIAL.

**Input Requirement:** Data Item 017 is required whenever there are downgrading instructions contained in the source from which the classified data in the record was derived.

**Example:**  
017. C,19991105

**Original Classification Authority .....018**



60\* characters - 1 occurrence

Submitted to IRAC: yes          GMF tag: \*CLA

**Description:** This data item indicates the title and organization of the individual who determined the original classification of the classified data in the assignment record.

**Input Requirement:** Data Item 018 is required when classification information is **not** derived from another document such as a classification guide, J-12 paper, or operations plan (see Data Item 014). Enter the title and organization of the original classification authority. When Data Item 018 is used an entry is required in Data Item 019.

**Examples:**

018. CDR,AMC

018. CDR,AFMC

018. CDR,7FLT

If the identification of the original classification authority reveals additional classified information, an entry of "018. EXCLUDED, 1.6.B" is permitted.

\* Data in records where SFAF Data Item 144 equals "Y" cannot exceed 35 characters until NTIA lengthens the GMF field.

**Reason for Classification .....019**

35 characters - 1 occurrence

Submitted to IRAC: yes          GMF tag: \*CLR

**Description:** This data item contains a coded data entry indicating the reasons the original classification authority determined that the data in this assignment was classified.

**Input Requirement:** Data Item 019 is required when classification information is **not** derived from another document such as classification guides, J-12 documents, or operations plans. Enter the reason for the classification from the list provided below. The data entry will be **1.4** followed by one or more letters in alphabetical order applicable to the appropriate paragraphs below. When Data Item 019 is used an entry is required in Data Item 018.

**Code    Description**

**A** - Military plans, weapons systems, or operations

**B** - Foreign government information

**C** - Intelligence activities (including special activities), intelligence sources or methods, or cryptology

**D** - Foreign relations or foreign activities of the US, including confidential sources

**E** - Scientific, technological, or economic matters relating to the national security, which includes defense against transnational terrorism

**F** - US Government programs for safeguarding nuclear materials or facilities

- G** - Vulnerabilities or capabilities of systems, installations, infrastructures, projects, plans, or protection services relating to national security, which includes defense against transnational terrorism; or
- H** - Weapons of mass destruction.

**Examples:**

019. 1.4A

019. 1.4EG

In rare instances, a textual entry may be present such as “FOREIGN RELATIONS.”

**Example:**

019. FOREIGN RELATIONS

## **Proposal References.....020**

64 characters - 10 occurrences<sup>4</sup>

Submitted to IRAC: no                      GMF tag: None

**Description:** Data Item 020 is the originating requester’s message date-time-group (DTG), E-mail or letter reference.

**Input Requirement:** (Optional). Enter the requester’s message DTG with a Plain Language Address Designator (PLAD) or other reference. This information will appear in FRRS transaction files only; it will not appear in the GMF or FRRS databases.

**Example:**

020. NFCWUS 041325Z DEC 87

## **Agency Serial Number.....102**

10 characters - 1 occurrence

Submitted to IRAC: yes                      GMF tag: SER

**Description:** Data Item 102 is the primary FRRS record identifier. It is unique and cannot be changed.

**Input Requirement:** The agency serial number is required for all types of actions that will be entered into the FRRS database. The serial number is formatted as AAAAYYNNNN. The agency abbreviation (identifier) for the assignment (as defined in the *NTIA Manual* or as listed below) is entered in characters 1-4 (AAAA). When AAAA is less than four characters, trailing spaces are required; the next two numbers (YY) identify the calendar year in which the assignment initially is processed; the following four numbers (NNNN) are specified to uniquely identify the assignment. The following are agency serial number identifiers for MILDEP/JFP frequency assignments

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<sup>4</sup>This data item is reserved for use by MILDEP, COCOM, and Agency frequency management offices or subordinate organizations when its use has been delegated to lower levels.

IDENTIFIER	ORGANIZATION	
AF	Air Force	
AR	Army	
CEN	CENTCOM	- Central Command
EUR	EUCOM	- European Command
J	DoD	
LA	JFCOM	- Joint Forces Command
N	Navy	
NS	NSA	
PAC	PACOM	- Pacific Command
SOU	SOUTHCOM	- Southern Command

**Example:**

102. N 775163

**Interdepartment Radio Advisory Committee Docket Number.....103**

8 characters - 10 occurrences

Submitted to IRAC: no                      GMF tag: AUS

**Description:** Data Item 103 is a reference number assigned by the IRAC to frequency applications submitted to the FAS. Automated databases provide ten IRAC docket numbers in the following order:

1. Docket number for current modification
2. Original docket number
- 3-10. Docket numbers for previous modifications or renewals in inverse chronological order.

**Input Requirement:** Data Item 103 is an NTIA computer-generated GMF output data item.

**List Serial Number..... 105**

10 characters - 1 occurrence<sup>4</sup>

Submitted to IRAC: yes                      GMF tag: LSR

**Description:** Data Item 105 is the agency serial number of a GMF record representing a group or area assignment. It brings into use, by a particular station or stations, a frequency authorized under a group assignment or authorized for communications with nongovernment stations.

**Input Requirement:** Only enter the Serial Number of a GMF group or area assignment if a Notification (F) action is used.

**Example:**

105. N 765530

**Serial Replaced, Delete Date ..... 106**

10,8 characters - 1 occurrence<sup>4</sup>

Submitted to IRAC: yes            GMF tag: SRS, SEX

**Description:** A record may be deleted from the GMF using Data Item 106 while entering a New or Notification type of action. This is a two-part data item. The first part of the data item is the serial number of the GMF record being deleted and the second part of the data item is the date the record will be automatically deleted from the GMF. This data item is not retained in approved assignment records.

**Input Requirement:** Data Item 106 is only used to delete IRAC reportable records. If an existing GMF assignment record is to be deleted using a New action or a Notification action, enter the agency Serial Number of the existing assignment followed by the desired date of deletion (YYYYMMDD). If multiple records are to be deleted based on a single new assignment, **one** record can be deleted using the Serial Replaced, Delete Date data entry and the others can be deleted using separate Delete actions.

**Example:**

106. N    820512,19981005

**Authorization Date.....107**

8 characters - 1 occurrence

Submitted to IRAC: no            GMF tag: AUD

**Description:** The date (YYYYMMDD) on which a GMF assignment was originally authorized.

**Input Requirement:** This is an NTIA computer-generated GMF output data item only.

**Example:**

107. 19971105

**Docket Numbers of Older Authorizations.....108**

35 characters - 30 occurrences<sup>4</sup>

Submitted to IRAC: yes            NTIA tag: \*DOC

**Description:** Data Item 108 provides a history of an assignment's previous GMF authorizations. It allows New or Notification type of actions to retain all previously assigned docket numbers, authorization dates, and agency serial numbers.

**Input Requirement:** This data item is optional. Enter up to 35 alphanumeric characters for Docket Numbers of Older Authorizations to be retained in a New action or a Notification action as applicable. Multiple docket entries are allowed within a 35-character line by separating them with a comma. Authorization dates and serial numbers may also be entered along with the docket numbers within a 35-character line by separating them with commas.

**Examples:**

108.    I84729

- Docket only

108.	I73621,195704	- Docket and date
108.	I67543,195510,N 550142	- Docket, date, and serial number
108.	I89432,I6723419	- Two dockets
108.	I6943591,AF 690431	- Docket and serial number

## EMISSION CHARACTERISTICS

Data Items 110 through 118 contain the data elements for designating a required frequency, and the relationship of the frequency with controlling factors such as station class, emission designators, and power.

### **Frequency(ies)** .....110

11 or 11-11 or 11(11) characters - 1 occurrence

Submitted to IRAC: yes              GMF tag: FRQ or \*FRB

**Description:** Data Item 110 is the frequency band or discrete frequency assigned to the unit and/or required for the equipment described in the assignment. A reference frequency, if included, is the assignment of a suppressed or reduced carrier sideband.

**This data item is used in frequency nomination or interference analysis. Failure to provide data for this item will result in a possible reduction of analysis accuracy.**

**Input Requirement:** This data item is always required. Enter the discrete frequency or frequency band assigned to the unit and/or required for the equipment described in the assignment. A reference frequency (also known as the window or dial frequency), if included in parenthesis, is the assignment of a suppressed or reduced carrier sideband. The reference frequency is entered in parenthesis without the frequency units indicator. For a frequency band assignment, enter the lower frequency and the upper frequency (separated by a dash) with the frequency unit indicator preceding the lower frequency. An upper frequency range unit indicator is required if the units of the upper frequency range is different from the units of the lower frequency range, e.g., 110. K2000-M35. For certain operations, the assignment of a range of frequencies (frequency band) may be required in lieu of a specific operating frequency. These types of assignments shall only be requested when specific frequencies will not satisfy the requirements. Frequency band assignments are normally authorized for the following:

- a. Transmitters which automatically sweep through all frequencies in a band
- b. Radiosonde transmitters operating in either of the bands: M400.15 - 406.0 or M1670 - 1700
- c. Frequency-agile radar beacons (racon) operating in either of the bands: M2900 - 3100 or M9300 - 9500
- d. Transmitters that use automatic frequency selection based on changing propagation conditions along the transmission path

- e. Transmitters that automatically pause at 15 or more specific operating frequencies within a band
- f. Operations that require the use of 15 or more specific operating frequencies within a band for Research, Development, Test and Evaluation (RDTE) purposes
- g. Operations that involve a multitude of mobile radiolocation or radionavigation transmitters. Whenever possible, at the option of the applicant, operational frequencies may be recorded in Data Item 503
- h. Tactical and/or training assignments (above 30 Megahertz (MHz)) that require the use of 15 or more specific operating frequencies within a band
- i. Operations devoted exclusively to Electronic Warfare (EW), Electronic Countermeasures (ECM), and/or Electronic Counter-Countermeasures (ECCM). For sideband operations, enter the reference frequency in parentheses after the assigned frequency.

Precede the frequency value with unit indicators as follows:

**Indicator          Description**

- K** - if frequency is less than 30 MHz
- M** - if frequency is at least 30 MHz, but less than 100 GHz
- G** - if frequency is at least 100 GHz, but less than 3 THz
- T** - if frequency is 3 THz or greater.

Insert a decimal point only if there is a significant digit to the right of the decimal point.

**Examples:**

- 110. K17034                      (a discrete frequency)
- 110. K6737.5(6736)        (a discrete frequency with a reference frequency)
- 110. K2000-M30              (a frequency band)

For frequency band(s) that are to be excluded from a given frequency band, enter the excluded bands in Data Item 111.

**Example:**

- 110. M13250-15700
- 111. M14770-14930

**Special Consideration for Processing Frequency Entries**

Frequency(ies), and frequency bands listed in FRRS records cannot be changed. However, the data item classification and reference frequencies may be changed. It should be noted that the changing of the classification of the frequency from or to SECRET in FRRS records sent to NTIA for inclusion in the GMF is not permitted. A new record must be created if the frequency is being changed from or to SECRET.

## **Excluded Frequency Band .....111**

23 characters - 30 occurrences

Submitted to IRAC: yes      GMF tag: \*FBE

**Description:** Data Item 111 is used in conjunction with a frequency band assignment to designate portions of the band excluded from the assignment.

**Input Requirement:** If a portion of a frequency band entered in Data Item 110 is to be excluded, enter the frequency band(s) to be excluded in ascending order. An upper frequency range unit indicator is required if the unit of the upper frequency range is different from the unit of the lower frequency range.

### **Examples:**

111. M960-1770

111/2. M2200-2400

## **Frequency Separation Criteria .....112**

35 characters - 1 occurrence

Submitted to IRAC: no      GMF tag: None

**Description:** Data Item 112 identifies the required frequency separation between the different radio sets operated at one transmitter or receiver location.

**Input Requirement:** Data Item 112 is required for EUCOM and CENTCOM assignments. It is optional for all others. Enter the required frequency separation ( $\Delta$ ), in MHz, between the different radio sets operated at one location.

**0.5 MHZ**      - For a transmitter power below 24.8 dBW (300 watts), enter 0.5 MHZ.

**2 MHZ**      - For a transmitter power above 24.8 dBW (300 watts), enter 2 MHZ.

**2.0 - 9.9 MHZ**      - For an exceptionally high transmitter powers, enter values between 2.0 MHz and 9.9 MHz.

Note: This data is required in order to avoid desensitizing the receivers if two or more UHF radio sets are operated at one location simultaneously, e.g., at a tower. This data is required to establish the prerequisites for an interference-free radio communication.

If, in radio relay frequency requests, a minimum frequency separation between a number of transmitters or between a transmitter and a receiver must be observed, these separation frequencies are to be entered. Enter the value in MHz. Use the following abbreviations and separate them with slashes:

**TX** - Transmitter

**RX** - Receiver

**Examples:**

112. 0.5 MHZ

112. 2.0 MHZ

112. TX/TX40MHZ/TX/RX100MHZ

**Station Class .....113**

4 characters - 20 occurrences

Submitted to IRAC: yes      GMF tag: STC

**Description:** Data Item 113 identifies the functional use of the assigned frequency at a particular transmitting station. See Annex A to this appendix for a list of acceptable station class symbols and their definitions. The suffix *R* is included if a station is used primarily as a repeater and operates in the bands 29.89-50 (exclusive Government use), 138-144, 148-149.9, 150.05-150.8, 162-174, and 406.1-420 MHz.

**This data item is used in frequency nomination or interference analysis. Failure to provide data for this item will result in a default value being used with a possible reduction of analysis accuracy.**

**Input Requirement:** Enter a standard station class symbol. (Data Items 113, 114, 115 and (116 for Europe only) are interrelated, and an entry in any of the data items must be accompanied by a corresponding entry in the other data items.)

**Example:**

113. FX

113/2. FX

113/3. ML

**Emission Designator .....114**

11 characters - 20 occurrences

Submitted to IRAC: yes      GMF tag: EMS

**Description:** Data Item 114 identifies the necessary bandwidth and emission classification symbols. The bandwidth can be determined by using formulas shown in the ITU Radio Regulations, CCIR Recommendations, or the NTIA Manual. Emission classification symbols consist of the three required symbols and the two optional symbols shown in Tables A-B-1 and A-B-2 in Annex B to this appendix.

**This data item is used in frequency nomination or interference analysis. Failure to provide data for this item will result in a default value being used with a possible reduction of analysis accuracy.**

**Input Requirement:** Enter an emission designator containing the necessary bandwidth and the emission classification symbols. (Data Items 113, 114, 115 and (116 for Europe only) are interrelated, and an entry in any of the data items must be accompanied by a corresponding entry in the other data items.) Enter the necessary bandwidth using the first four characters (three



digits and a unit designator letter are required), with the unit designator in the position the decimal would normally occupy. Use:

**H** - If the value is less than 1000 Hz

**K** - 1 kHz to values less than 1000 kHz

**M** - 1 MHz to values less than 1000 MHz

**G** - 1 GHz or greater.

A doppler shift shall not be included in the frequency tolerance or bandwidth of emission; however, when a doppler shift is significant, it should be reported in Data Item 520.

**Examples:**

a. For a frequency assignment with a single emission designator, enter:

114. 3K00J3E

b. Similarly, for a frequency assignment with two emission designators, enter:

114. 1K24F1B

114/2. 3K00J7B

c. If the same emission is to be used for two different station classes, enter the emissions twice:

114. 100H00F1B

114/2. 100H00F1B

d. To enter multiple emission designators, enter them on subsequent lines as shown below:

114. 3K00J3E

114/2. 3K00J1D

114/3. 1K10F1B

114/4. 100H00A1A

114/5. 3K00J3E

114/6. 100H00A1A

e. To change the third emission designator in a record containing three or more emissions, enter:

114/3. 1K24F1B

f. If the third emission designator is to be deleted, the corresponding entries in data items 113/3 (Station Class) and 115/3 (Power), 116/3 (Power Type) must also be deleted. For example:

113/3. \$

114/3. \$

115/3. \$

116/3. \$ (For Europe only)

**Transmitter Power .....115**

9 characters - 20 occurrences

Submitted to IRAC: yes GMF tag: PWR

**Description:** Data Item 115 identifies the maximum transmitter power output authorized to be used.

**This data item is used in frequency nomination or interference analysis. Failure to provide data for this item will result in a default value being used with a possible reduction of analysis accuracy.**

**Input Requirement:** Enter one or more power data entries. Enter (1) carrier power (pZ) for A3E sound broadcasting in the broadcasting service, (2) mean power (pY) for other amplitude modulated emissions using unkeyed full carrier, and for all frequency modulated emissions, and (3) peak envelope power (pX) for all emission designators other than those referred to in (1) and (2) above, including C3F television (video only). (Data Items 113, 114, 115 and (116 for Europe only) are interrelated, and an entry in any of the data items must be accompanied by a corresponding entry in the other data items.) Express the power to a maximum of five decimal places and precede the entry with the unit designator as follows:

**Code Description**

**W** - if power is less than 1000 watts

**K** - if power is at least 1 kW but less than 1000 kW

**M** - if power is at least 1 MW but less than 1000 MW

**G** - if power is 1 GW or greater.

**Example:**

115. W0.5

115/2. K1.5

**Power Type .....116**

1 character - 20 occurrences

Submitted to IRAC: no GMF tag: None

**Description:** Data Item 116 describes the power type code for either the carrier, mean, or peak envelope power emitted. The power type code will depend on the type of emission of the transmitter equipment.

**Input Requirements:** Data Item 116 is required for EUCOM and CENTCOM assignments. It is optional for all others. (Data Items 113, 114, 115 and (116 for Europe and CENTCOM only) are interrelated, and an entry in any of the three data items must be accompanied by a corresponding entry in the other data items.) Enter the power type code as defined below. The number of occurrences should match the number of occurrences in Data Item 115. The types of power codes are listed below:

**Code Description****C - Carrier Power**

Use this for "N0N" and for "A3E" sound broadcasting service (Station Class "BC").

**M - Mean Power**

(For all air to air (A/A) & air/ground/air (A/G/A)). Use this for most AM emissions using unkeyed full carrier and all frequency modulated emissions. Typical emissions include A2A, A2B, A3C, A3E, A3F, A7B, AXX, F1B, F1C, F2B, F3E, F3F, F7B, FXX, H2A, H3E, and H7B.

**P - Peak Envelope Power**

Use this for all pulsed equipment, C3F Television, and the following classes: A1A, A1B, A7B, B7B, B8C, B8E, BXX, C3F, G3E, J2B, J3E, J7B, JXX, K1B, K2B, K3E, K3F, L2B, M2B, M3E, P0N, PXX, R2B and R3C.

**Example:**

116. P  
116/2. P

**Effective Radiated Power .....117**

6 characters - 20 occurrences

Submitted to IRAC: no                      GMF tag: None

**Description:** This is the power radiated from the transmitter antenna. It is the sum of the power supplied to the antenna and the gain of the antenna, expressed in dBm.

**Input Requirements:** Data Item 117 is filled in some Federal Communications Commission (FCC) and ITU records and is computer-generated by the JSC in other instances based upon the data entered in Data Items 115 (Transmitter Power) and 357 (Transmitter Antenna Gain). The Effective Radiated Power (ERP) is entered in dBm.

**Example:**

117. 40

**Power/ERP Augmentation .....118**

1 character - 20 occurrences

Submitted to IRAC: no                      GMF tag: None

**Description:** This is a coded data entry that is used to indicate when either Data Item 115 (Power) or Data Item 117 (ERP) is computer-generated.

**Input Requirement:** This is a JSC computer-generated output data item. One of the following codes was used:

**Code Description**

**P**        - power field (Data Item 115) computer-generated  
**E**        - ERP field (Data Item 117) computer-generated

**Blank** - neither field was computer-generated.

**Example:**

118. P

## TIME/DATE INFORMATION

Data items in this section contain data related to implementation of the assignment, time period when the frequency is to be used, expiration/review data, indicators for further processing, registration through international channels, and identifiers of trunk service and/or joint assignment use.

### **Time.....130**

4 characters - 1 occurrence

Submitted to IRAC: yes                      GMF tag: TME

**Description:** Data Item 130 describes the period of time when the frequency will be either guarded (monitored) or used for transmission. The period indicated is not a limitation or a restriction, but rather the period when the frequency must be available to satisfy its operational requirement. The data entered shall indicate (1) whether the frequency is required occasionally or on a regular basis, and (2) whether it is required only during the normal workweek (between 0600 and 1800, Monday through Friday) or for additional periods of time.

**Input Requirement:** This data item is required on regular assignments using frequency bands 29.89-50, 138-144, 148-149.90, 150.05-150.80, 162-174, and 406.10-420 MHz, except those for experimental stations and those with IRAC Notes (Data Item 500) S321 and S322. For all other bands at 29890 kHz and above, this data item is required for assignments with US, USA, or USP in Data Item 300 (transmitter State/Country). Use the appropriate number as follows:

#### **Code    Description**

- 1**   - Regular, not limited to workweek
- 2**   - Regular, workweek
- 3**   - Occasional, not limited to workweek
- 4**   - Occasional, workweek.

For stations in the fixed service below 29890 kHz, the above number must be followed by one of the following symbols to indicate the time of availability on a daily basis:

#### **Code    Description**

- HX** - For stations operating intermittently throughout the 24-hour day or for circuits with no specific working hours
- HN** - Night service
- HJ** - Day service
- H24** - Continuous 24-hour service
- HT** - For transition period service.

**Examples:**

130. 2

130. 1H24

**Percent Time.....131**

2 characters - 1 occurrence

Submitted to IRAC: no                      GMF tag: None

**Description:** Data Item 131 describes the percentage of time the transmitter equipment is in use during the scheduled hours of operation.

**Input Requirement:** Data Item 131 is required for EUCOM Germany assignments. It is optional for all others. Enter the percentage of use during the scheduled hours of operation.

**Example:**

131. 50

**Required Date.....140**

8 characters - 1 occurrence

Submitted to IRAC: no                      GMF tag: None

**Description:** Data Item 140 is the date a new assignment or modification to an assignment is to be operational.

**This data item is used in frequency nomination or interference analysis. Failure to provide data for this item will result in a default value being used with a possible reduction of analysis accuracy.**

**Input Requirement:** Enter the year, month, and day (YYYYMMDD) the new assignment, or modification to an existing assignment, is required by the operating unit. For temporary or exercise proposals, enter the date frequencies will first be used.

**Example:**

140. 19990101

**Expiration Date .....141**

8 Characters - 1 occurrence

Submitted to IRAC: yes                      GMF tag: EXD

**Description:** Data Item 141 is the date when an assignment is to expire. . This data item is required in all temporary assignments. This data item is blank when Data Item 142 contains data.

**This data item is used in frequency nomination or interference analysis. Failure to provide data for this item will result in a default value being used with a possible reduction of analysis accuracy.**

**Input Requirement:** There are two groups of records that contain expiration dates. First, are U.S. GMF assignments and DoD permanent records (record type “P” or “A”) with an expiration date in the period of 90 days to 5 years in length. For this group of records, enter the year, month, and day (YYYYMMDD) the requirement for use of the assignment will end.

The second group are those DoD “short term” temporary records (record type “S” or “T”) that must be placed on regional servers. All “short term” temporary FRRS records (record type “S” or “T”) must contain Data Item 141. In these DoD temporary records the expiration date will normally be greater than 30 days and not exceed 1 year from the date the assignment is approved. DoD temporary records (record type “S” or “T”) of less than 30 days are referred to as “daily temporary” records and may be held at the local level on client PCs. The user may place them on regional servers if desired; however, that is not required.

Data Item 141 can be used in conjunction with Data Item 140 to specify the period of time an assignment will be used. For example, a proposal for an exercise or test from 7 September 2004 through 21 September 2004 would contain the entries **140. 20040907** and **141. 20040922**. Note: Assignments will be automatically expired on their expiration date and deleted from the database. If a permanent assignment is being changed from an assignment with an expiration date to an assignment with a review date, then Data Item 141 must be deleted, i.e., **141. \$**. However, if the original assignment was a temporary assignment and the new assignment is to be a permanent assignment, a new permanent proposal must be created and the original temporary assignment must be deleted. There is no mechanism to change a DoD temporary record to a U.S. GMF or DoD permanent record. This data item is required for CENTCOM serial numbered records.

**Example:**

141. 20020622

**Review Date .....142**

8 characters - 1 occurrence

Submitted to IRAC: no                      GMF tag: None

**Description:** Data Item 142 is the date by which the assignment is to be reviewed according to the FRRS record review program. If records are processed to IRAC, the review date will be regenerated based on the approval date plus five years for all assignments except AAG/MAG and space stations in a geostationary-satellite orbit for which ten years are added to the approval date. In permanent non IRAC reportable records, review dates are computer generated based upon the assignment approval date plus five years. Whenever the date in Data Item 005.2 is formatted DEYYYYMMDD and is less than the five or ten year review date described above, the review date in this item will be set to the date 90 days prior the declassification date entered in data item 005.2.

**Input Requirement:** All permanent FRRS records (record type “P” or “A”) must contain either Data Item 141 or Data Item 142, but not both. If Data Item 141 is blank or is being deleted, and if Data Item 142 is not entered by the assignor, Data Item 142 will be computer-generated, based upon the data entered in Data Items 102, 143 and 958. Enter the year, month, and day (YYYYMMDD) if the desired review date is less than five years or less than 10 years if the

record is a European Command (EUCOM) assignment. (If Data Item 141 contains an expiration date, leave the review date blank.)

**Example:**

142. 20020331

**Revision Date.....143**

8 characters - 1 occurrence

Submitted to IRAC: no                      GMF tag: RVD

**Description:** The date (YYYYMMDD) on which the GMF frequency assignment was initially approved or most recently revised.

**Input Requirement:** Data Item 143 is an NTIA computer-generated GMF output data item.

**Example:**

143. 19960131

**Approval Authority Indicator .....144**

1 character - 1 occurrence

Submitted to IRAC: no                      GMF tag: None

**Description:** Data Item 144 indicates whether or not the assignment is to be processed to IRAC for approval.

**Input Requirement:** The approval authority indicator is required on all DoD transactions. Use the appropriate code listed below:

**Code    Description**

**Y** -    Assignment record is to be processed through IRAC.

**U** -    Assignment record is inside the US&P and is **not** to be processed through IRAC.

**O** -    Assignment record is OUS&P and is **not** to be processed through IRAC.

**N** -    An existing IRAC assignment contains Data Item **144. Y**, but this transaction is **not** to be processed through IRAC. The data being changed will not be stored in the GMF record. This code is used when Data Item 010. Type of Action is “A” when non IRAC reportable fields are being administratively modified in an IRAC reportable record.

Note: FRRS records that contain Data Item 144 equal to O or U **cannot** be changed to Data Item 144 equal to Y. A new transaction must be submitted.

**Example:**

144. Y

**ITU BR Registration.....145**

1,20 characters - 1 occurrence<sup>4</sup>

Submitted to IRAC: no                      GMF tag: None

**Description:** Data Item 145 indicates the action taken, or to be taken, to register an assignment with the International Telecommunication Union (ITU) Radiocommunication Bureau (BR).

**Input Requirement:** Data Item 145 indicates the status of the assignment's registration with the ITU BR. Enter the appropriate indicator from the following list:

**Code Description**

- R** - notified and registered by BR
- U** - notified to BR but negative decision
- I** - registration with BR on an insistence basis
- O** - not notified to BR
- P** - pending notification to BR
- M** - registered with BR, but needs to be modified
- Y** - BR registration required.

If amplifying comments are to be included, enter a comma following the indicator and then the comments. If a registration date is to be included in the comments, enter the date (YYYYMMDD) first, followed by a comma and any other information.

**Example:**

145. R,19690527,2A

**DCS Trunk ID .....146**

6 characters - 20 occurrences<sup>4</sup>

Submitted to IRAC: no                      GMF tag: None

**Description:** Data Item 146 is the Defense Communications System (DCS) trunk identifier assigned by DISA. See Chapter 66 of DISAC 310-65-1.

**Input Requirement:** Enter the DCS trunk identifier when assigned by DISA.

**Examples:**

146. 45CS01

146/2. 45US02

**Joint Agencies .....147**

4 characters - 20 occurrences<sup>4</sup>

Submitted to IRAC: yes                      GMF tag: \*JNT

**Description:** Data Item 147 identifies a joint assignment used by two or more agencies.

**Input Requirement:** Data Item 147 is required when Data Item 200 equals JNTSVC. For a joint application, enter the appropriate abbreviation of the joint agencies. Use the abbreviations as shown in Annex G of the *NTIA Manual*. Enter the agency identified in Data Item 102 as the first joint agency. Enter H for unidentified agencies in non-IRAC assignments.



**Example A:**

147. AF (USAF and Federal Aviation Administration (FAA) joint assignment)  
147/2. FAA

**Example B:**

147. H (Entry for an unidentified agency)

**Coordination Indicator.....151**

1 character - 1 occurrence<sup>4</sup>

Submitted to IRAC: yes GMF tag: ICI

**Description:** Data Item 151 indicates whether the IRAC is to coordinate the application with the Canadian Government, the Mexican Government, or both. It is also used for EUCOM assignments coordinated with NATO or host nations, or both.

**Input Requirement:** For assignments near US borders, enter one of the following codes:

**Code Description**

**C** - Coordinated with Canada

**M** - Coordinated with Mexico

**B** - Coordinated with both Canada and Mexico

For EUCOM and Atlantic Command (LANTCOM) assignments, enter one of the following codes:

**Code Description**

**M** - Coordinated with NATO for inclusion in the Master Radio Frequency List (MRFL)

**H** - Coordinated with Host Nation

**B** - Coordinated with both NATO and Host Nation

**Example:**

151. C

The coordination indicator is also used to identify the US Government coordination channels for those Canadian assignments along the US/Canada border that have been included in the GMF for EMC analysis purposes:

**Code Description**

**D** - coordinated through NTIA with FAS member agencies

**F** - coordinated through the FAA

**J** - coordinated through the DoD's Joint Chiefs of Staff (JCS)

**U** - no indication of coordination.

**Coordination Data .....152**

1,35 characters - 30 occurrences<sup>4</sup>

Submitted to IRAC: yes

GMF tag: \*CAN and/or \*MEX

**Description:** Data Item 152 consists of comments previously coordinated by the FAS Secretary with Canada and/or Mexico. This is a two-part data item: the first part identifies the country and the second part identifies the comment from that country.

**Input Requirement:** For new assignments replacing existing assignments (serial replaced actions), enter comments as previously coordinated (by the FAS Secretary) with Canada (C) or Mexico (M). Comments for other new assignments will be entered by the NTIA FAS Secretary when coordination comments are received from Canada or Mexico.

**Example:**

152. M,780029, NAIA

(Record with comments received from  
Mexico and Canada)

152/2. C,750361, NO MOBILE USE

152/3. C,WITHIN 40 MI RAD OF

152/4. C,BURNABY BC

United States comment data added by NTIA staff to Canadian or Mexican coordinated records (as REMnn \*USA,) that are contained in the GMF will be formatted in SFAF Data Item 152 as follows:

**Examples:**

152. U,NHIA, NOTING USE OF M163.4375, U.S.

152/2. U,NHIA, SERIAL I8701234, DETROIT, MI

## ORGANIZATIONAL INFORMATION

Data Items 200 through 209 serve two major purposes: (1) As applicable, they identify the frequency management chain responsible for managing the assignment and the organizations having an area interest in the assignment area, and (2) they are also used for the selection and distribution of records. These data items are especially important when assignments are needed promptly to meet mission requirements.

Each frequency assignment has a management chain, from the service headquarters or COCOM down to the operating unit. If logically and consistently entered into the records, the data concerning the organizations in the frequency management chain can be used to select and sort records in the manner most efficient for use by each management level in the chain. Data Item 200 (Agency) and Data Item 207 (Operating Unit) should always be filled in. There may be occasions when members of the management chain are entered in more than one data item. For example, ACC (the command listed in Data Item 204) could be the operator of a net at Langley AFB. In this case, Langley (the base FMO listed in Data Item 206) could have ACC as an operating unit (Data Item 207). Consistency is the key factor in making these data items work for the good of the system. Each organizational level, from the top down, to and including operating units, must enter its data the same way each time. Although some higher level data entries are standardized by the service or COCOM, at the operating unit level they are frequently not standardized. Therefore, all frequency management levels should ensure the consistency of the data being entered by those elements subordinate to them. Where organizational data content has

not been specified by a higher authority, operating units can develop their own, but they **must** be consistent when making data entries in subsequent transactions. Previous variations in organizational data are being "cleaned up" and a periodic review system has been established to maintain data item consistency.

To make this system work, each agency, COCOM, and area frequency coordinator (AFC) should look at its subordinate frequency management structure and decide which frequency management elements will be reflected at which level. In most cases, it is clear; however, there will be situations where it is not clear to the level concerned. For example, in Europe, should the NCTAMSMED entry be entered in data items 203, 204 or 205? Careful, thorough planning and execution should yield a database that can, with a high degree of certainty, provide the proper records via automated data distribution for each FRRS participant. Some organizations having frequency management responsibility may not need all the organizational data items listed. However, those data items used should be entered consistently. For example, if 8AF was also entered as 8F or 8 AF, then all the records for the 8AF would not be grouped together. To reduce this type of problem, the elimination of spaces is required.

## **Agency .....200**

6 characters - 1 occurrence

Submitted to IRAC: no                      GMF tag: None

**Description:** Data Item 200 identifies the agency responsible for managing the frequency assignment. Within the DoD this is normally USA, DON, USAF, or NSA. If an assignment is in joint use by two or more agencies, then both Data Items 147 and 200 must be completed. The responsible DoD agency will be entered as the first data entry in Data Item 147 followed by the other joint agencies. For example, an assignment between USAF and NASA would be entered as **147. USAF, 147/2. NASA and 200. JNTSVC**.

**Input Requirement:** Enter one of the following service or agency abbreviations: USA, DON, USAF, NSA, or JNTSVC. If JNTSVC is entered, Data Item 147 must be completed.

### **Example:**

200. USA

## **Unified Command .....201**

8 characters - 10 occurrences

Submitted to IRAC: no                      GMF tag: None

**Description:** Data Item 201 identifies the unified command (PACOM, EUCOM, SOUTHCOM, CENTCOM, JFMOLANT, NORTHCOM) or designated representative for the area in which the assignment will be used.

**Input Requirement:** This data item is required for all assignments where either the transmitter or a receiver is located OUS&P.

### **Example A:**

201. PACOM

**Example B:**

201. EUCOM

201/2. SOUTHCOM

**Unified Command Service .....202**

8 characters - 10 occurrences

Submitted to IRAC: no                      GMF tag: None

**Description:** Data Item 202 identifies the service-level organization within the unified command area that is responsible for managing the assignment. Within the CONUS, Data Item 202 identifies the Air Force or Army MAJCOM host responsible for the installation listed in Data Item 206.

**Input Requirement:** Enter the Major Command (MAJCOM) or Specified/Unified Command that has operational control of the installation or region of the world where the transmitter is located (this is not necessarily the Command that has operational control of the assignment). Within the CONUS, Air Force and Army organizations enter the MAJCOM of the host installation.

**Examples:**

202. PACAF

202. FORSCOM

**Bureau .....203**

4 characters - 1 occurrence

Submitted to IRAC: yes\*                      GMF tag: BUR

**Description:** Data Item 203 identifies the Bureau to be included in the record.

**Input Requirement:** Data Item 203 is required for Army assignments within the US&P and for all United States Marine Corps (USMC) and Navy (USN) assignments worldwide.

**Examples:**

203. PA                                      (An Army assignment in the PACOM area)

203. USMC                                  (A Marine Corps assignment)

\*For Army records only.

**Command.....204**

18 characters - 1 occurrence

Submitted to IRAC: no                      GMF tag: None

**Description:** Data Item 204 identifies the Major Command or other applicable organization frequency management level that is subordinate to the responsible agency identified in Data Item 200.

**Input Requirement:** This data item is required in all assignments. Enter the major command or other applicable organization.

**Examples:**

204. ACC

204. TRADOC

**Subcommand .....205**

18 characters - 1 occurrence

Submitted to IRAC: no                      GMF tag: None

**Description:** Data Item 205 indicates the frequency management level between the command (Data Item 204) and the installation frequency manager (Data Item 206), or a level of command below the organization entered in Data Item 204.

**Input Requirement:** Enter the frequency management level between the command and installation frequency manager.

**Example:**

205. 5AF

**Installation Frequency Manager .....206**

18 characters - 1 occurrence

Submitted to IRAC: no                      GMF tag: None

**Description:** Data Item 206 normally indicates the station, base, installation, or fort-level frequency management office responsible for the location of the operating unit.

**Input Requirement:** Enter the installation frequency manager when it exists.

**Examples:**

206. ANDREWS

206. BRAGG

206. NASPAXRV

**Operating Unit.....207**

18 characters - 10 occurrences

Submitted to IRAC: no                      GMF tag: None

**Description:** Data Item 207 indicates the name or designation of the organization using the frequency assignment.

**Input Requirement:** This data item is required. Enter the short name or designation of the organization using the frequency assignment. For PACFLT: Enter ACFT and/or SHIPS when Data Item 300 equals PAC, LANT, INDO, etc.

**Examples:**

207. 602TCW  
207. SUBRON18  
207. 517ARTY

**User Net/Code.....208**

6 characters - 1 occurrence

Submitted to IRAC: yes\*      GMF tag: NET (Only the first five characters of the first data entry)

**Description:** Data Item 208 is a unique code that identifies the specific user of the frequency, i.e., the command, activity, unit, project, etc.

**Input Requirement:** Enter codes as directed by the responsible agency, as follows:

**Army:**      Enter one Net Control Code.

**Navy:**      Enter the one Unit Identification Code (UIC) of either the operating unit identified in Data Item 207 or in Data Item 302.

**Examples:**

208. N53618  
208. ACEUS

\*For Army and NSA records only.

**Area AFC/DoD AFC/Other Organizations .....209**

18 characters - 10 occurrences

Submitted to IRAC: no      GMF tag: None

**Description:** Data Item 209 identifies the DoD AFC, COCOM, Service Area Frequency Management Office, or other organization not provided in Data Items 200-208.

**Input Requirement:** This data item is optional. Enter the DoD AFC, COCOM, Service Area Frequency Management Office or other organization not provided in data items 200-208. The following standard entries are used for DoD AFCs:

<b>Code</b>	<b>Description</b>
<b>AFCA</b>	- DoD AFC Arizona
<b>WSMR</b>	- DoD AFC White Sands Missile Range
<b>GAFC</b>	- DoD Gulf AFC
<b>EAFC</b>	- DoD Eastern Space and Missile Test Center at Cape Canaveral, FL
<b>AFCPR</b>	- DoD AFC Puerto Rico

**NAFC** - DoD AFC Nellis  
**WAFC** - DoD Western AFC  
**USAKA** - DoD AFC Kwajalein.

If Data Item 300 equals US, USA, or USP, enter only the following DoD AFC codes respectively:

<b>Code</b>	<b>Description</b>
<b>AFCUS</b>	- Area Frequency Coordinator United States
<b>AFCUSA</b>	- Area Frequency Coordinator United States of America
<b>AFCUSP</b>	- Area Frequency Coordinator United States and Possessions.

**Example:**  
 209. JJPN (an “other organization”)

## TRANSMITTER LOCATION DATA

Transmitter Data Items 300 through 306 include all technical information pertaining to a single transmitter location. Only one transmitter location is allowed per assignment record.

**State/Country .....300**

4 characters - 1 occurrence

Submitted to IRAC: yes      GMF tag: XSC

**Description:** Data Item 300 is an authorized abbreviation for the state, country, or geographical area in which the transmitting station is located. This data item cannot be changed in an FRRS record containing 144. Y.

**This data item is used in frequency nomination or interference analysis. Failure to provide data for this item will result in a possible reduction of analysis accuracy.**

**Input Requirement:** This data item is required. Enter the name or standardized abbreviation (as listed in Annex C to this appendix) of the state, country, or area in which the transmitting antenna is located.

**Examples:**

300. IN  
 300. LANT  
 300. SPCE

**Antenna Location .....301**

24 characters - 1 occurrence

Submitted to IRAC: yes      GMF tag: XAL

**Description:** Data Item 301 is the name of the city, base, or geographical area of operation within which the transmitting antenna is actually located.

**This data item is used in frequency nomination or interference analysis. Failure to provide data for this item will result in a possible reduction of analysis accuracy. Note: if Data Items 300 and 301 contain the same value, the record is marked as an area assignment and may be excluded from frequency nomination or interference analysis consideration.**

**Input Requirement:** This data item is required. Enter the name of the city, base, or geographical area where the transmitter antenna is located. Abbreviate the data entry if necessary; however, if an abbreviation is not required, the entry should be spelled the same as that in the US postal zip code directory or applicable gazetteer. After being entered the first time, all future entries for that same location should be spelled the same. If the transmitter antenna location is the same as the entry in Data Item 300, the antenna location should be abbreviated using the same abbreviation as that entered in Data Item 300. In addition to the above, the following will apply:

a. The following standard abbreviations will be used even if the entry is less than 24 characters:

<b>Abbreviation</b>	<b>Location Word</b>	<b>Abbreviation</b>	<b>Location Word</b>
<b>ARPT</b>	Airport	<b>IAP</b>	International Airport
<b>ARA</b>	Army Area	<b>IS</b>	Island(s)
<b>CP</b>	Camp	<b>LNB</b>	Large Navigational Buoy
<b>CY</b>	City	<b>MT</b>	Mont, Monte, Mount(s)
<b>CGD</b>	Coast Guard District	<b>MTN</b>	Mountain(s)
<b>CO</b>	County	<b>MAP</b>	Municipal Airport
<b>DI</b>	District	<b>PG</b>	Proving Ground(s)
<b>DIV</b>	Division	<b>PT</b>	Point
<b>FT</b>	Fort	<b>ST</b>	Saint

b. If the location name exceeds 24 characters after applying the standard abbreviation(s) listed in “a” above and the entry has not been previously used, then shorten the entry to 24 characters and enter the full text in Data Item 801 for review by the assignment authority.

If an area of operation is selected, it may be described as a radius, in kilometers, extending from a given location. For example, if an assignment is for transmission anywhere within a 50-kilometer radius of Dallas, then insert DALLAS in this data item and the radius in Data Item 306 (Authorized Radius). An area of operation may also be described by geographical coordinates. For example, if an assignment is for one or more land mobile stations operating south of 33 degrees north in the state of Arizona, then insert AZ in this data item and the coordinate data in Data Item 530 (Authorized Areas).

An area of operation within several states may also be described in this data item as US or USA, with the included or excluded states being shown in Data Item 531 (Authorized States). Similarly, US&P may be used if the area includes a possession. For locations described as an area of operation, note that operations might not occur in every square mile of the area selected and the area described might overlap into states not shown in Data Item 300 (State/Country).



Although the data inserted shall normally be geographical names or descriptions, exceptions may be made for experimental operations, mobile operations where the state/country and antenna location data items are identical (such as 300. PAC, 301. PAC, etc.), and/or space operations. For an assignment to an experimental station, other than one in space, or to a mobile station having identical state/country and antenna location names, words such as AIRCRAFT, BALLOONS, or SHIPS may be used, as appropriate. For an assignment to a station aboard a geostationary satellite, insert GEOSTATIONARY. For an assignment to a station aboard a nongeostationary satellite, insert NONGEOSTATIONARY. For an assignment to a station located on a natural object in space, insert the name of the object, e.g., MOON.

c. **“COASTAL WATERS”** in DoD spectrum management documentation is defined as all navigable ocean waters, including ports, docks, intracoastal waterways, and the area extending from the coastline (of the state/country described in Data Item 300 or 400) outward for a distance of 150 nautical miles. Navigable ocean waters is defined as all waters affected by ocean tides in which DoD water craft of any type can operate.

**Examples:**

301. FT BRAGG

301. NASHVILLE

301. NONGEOSTATIONARY

**Station Control .....302**

18 characters - 1 occurrence

Submitted to IRAC: yes                      GMF tag: XRC (only the first eight characters)

**Description:** Data Item 302 is used to identify the operating unit that controls, either electrically or administratively, the transmitting station when it is different from the data entered in Data Item 207. This data item is not used by Air Force.

**Input Requirement:** This data item is optional. Enter the operating unit or department that controls, either administratively or electrically, the transmitter station if it is different from the transmitter station operating unit in Data Item 207.

**Example:**

302. PWC

**Antenna Coordinates .....303**

15 characters - 1 occurrence

Submitted to IRAC: yes                      GMF tag: XLA, XLG

**Description:** Data Item 303 is the World Geodetic System 1984 (WGS 84) datum latitude and longitude (expressed in degrees, minutes, and seconds) of the transmitter antenna location entered in Data Item 301.

**This data item is used in frequency nomination or interference analysis. Failure to provide data for this item will result in a possible reduction of analysis accuracy.**

**Input Requirement:** This data item is required except when the site named in Data Item 301 is an area of operation for which coordinates cannot be applied or for nongeostationary satellites. Enter geographical coordinates (degrees, minutes, and seconds) for the antenna location. If the seconds are not known, insert 00 for the seconds, except in the case of navigation aid system (NAVAIDS), geostationary satellites, and microwave facilities where seconds are required. Use leading zeros as appropriate for degrees, minutes, or seconds. Degrees latitude require two digits; degrees longitude require three digits. Enter N or S for latitude and E or W for longitude. If *GEOSTATIONARY* has been entered in Data Item 301, enter the latitude as 000000N and the longitudinal position of the satellite (in degrees, minutes, and seconds east or west). Note, when older maps are used, the coordinates may vary as much as 300-400 meters from locations determined by using DoD standard WGS 84 datum maps or Global Positioning System (GPS) equipment. Organizations are encouraged to obtain GPS equipment to determine the position of fixed antennas.

**Examples:**

303. 214216N1171039W

(Coordinates for a fixed location)

303. 000000N1750000E

(Coordinates for a geostationary satellite)

**Call Sign .....304**

10 characters - 1 occurrence

Submitted to IRAC: yes

GMF tag: XCL (only the first 8 characters)

**Description:** Data Item 304 is the international call sign assigned to the transmitting station. For navigational aids, this data item is used for the NAVAIDS identifier instead of a call sign.

**Input Requirement:** Data Item 304 is used to assign the international call sign to the transmitting station. Leave this data item blank if the call sign is either a local voice or tactical call sign, or if it is not applicable. For navigational aids, enter the NAVAIDS identifier.

**Examples:**

304. WUH55

304. AVV

**Authorized Radius .....306**

5 characters - 1 occurrence

Submitted to IRAC: yes

GMF tag: \*RAD

**Description:** Data Item 306 defines the area of operation for a portable, mobile, or transportable transmitter station. This area is expressed as a radius in kilometers extending from the geographical coordinates listed in Data Item 303.

**This data item is used in frequency nomination or interference analysis. Failure to provide data for this item will result in a possible reduction of analysis accuracy. Note: if data item 306 contains a large radius, the accuracy of frequency nominations or interference analysis for mobile stations may be degraded due to the radius of mobility multiplier. Note: if Data**

**Item 306 contains data and item 113 indicates Fixed Service, the accuracy of frequency nominations or interference analysis will be degraded. Any record with a Data Item 306 is considered to be mobile.**

**Input Requirement:** If the station is portable, mobile, and/or transportable, and a circular area is used to describe the area of operation, enter a radius (in kilometers) from the coordinates listed in Data Item 303 to describe the area in which the transmitter station will operate. Add the suffix T to the entry if the radius applies only to the transmitter station, or B if the radius applies to both the transmitter and receiver stations (Note: When both fixed and mobile stations are to transmit on the same frequency, leave this data item blank and enter the radius of the mobile station in Data Item 406.). For aircraft stations also enter radius data as part of Data Item 711.

**Examples:**

306. 30T (Indicates a 30-kilometer radius of operation for the transmitter)

306. 150B (Indicates a 150-kilometer radius of operation for both transmitter and receiver stations)

## SPACE STATIONS

Data Items 315 through 321 are to be used for transmitter space-station data. Leave Data Items 315 through 319 blank for geostationary satellites.

### **Equatorial Inclination Angle .....315**

4 characters - 1 occurrence

Submitted to IRAC: yes GMF tag: \*ORB preceding IN

**Description:** Data Item 315 indicates the angle at which the transmitting nongeostationary satellite's orbit crosses the equator. A nongeostationary satellite is defined as one whose circular orbit does not lie in the plane of the earth's equator and has a specific equatorial inclination, apogee, and perigee.

**Input Requirement:** Enter an equatorial inclination angle (in degrees), using a decimal point for fractional degrees for nongeostationary space transmitter stations.

**Example:**

315. 34.7

### **Apogee .....316**

5 characters - 1 occurrence

Submitted to IRAC: yes GMF tag: \*ORB preceding AP

**Description:** Data Item 316 indicates the point in the orbit of a nongeostationary satellite at which the satellite is farthest from the earth.

**Input Requirement:** Enter the apogee (in kilometers) for nongeostationary space transmitter stations.

**Example:**  
316. 23500

**Perigee .....317**

5 characters - 1 occurrence

Submitted to IRAC: yes          GMF tag: \*ORB preceding PE

**Description:** Data Item 317 indicates the point in the orbit of a nongeostationary satellite at which it is nearest to earth.

**Input Requirement:** Enter the perigee (in kilometers) for nongeostationary space transmitter stations.

**Example:**  
317. 200

**Period of Orbit .....318**

7 characters - 1 occurrence

Submitted to IRAC: yes          GMF tag: \*ORB

**Description:** Data Item 318 indicates the time it takes for a nongeostationary transmitter satellite to make one complete orbit.

**Input Requirement:** Enter the period of orbit for nongeostationary space transmitter stations. If the period of orbit is less than 24 hours, enter the time in hours followed by the letter H. If it is 24 hours or more, enter the number of days, followed by the letter D. Enter the data, using a decimal point for a fractional unit.

**Examples:**  
318. 19.6H  
318. 7D

**Number of Satellites.....319**

2 characters - 1 occurrence

Submitted to IRAC: yes          GMF tag: \*ORB preceding NR

**Description:** Data Item 319 indicates the number of nongeostationary satellite transmitters in a system having similar orbital characteristics.

**Input Requirement:** Enter the number of nongeostationary satellites in the system.

**Example:**  
319. 1

**Power Density .....321**

4 characters - 1 occurrence

Submitted to IRAC: yes      GMF tag: SPD

**Description:** Data Item 321 indicates the maximum power density, per hertz (in dBW), supplied to an earth or space station's antenna or to those of terrestrial stations (including experimental) employing earth or space-station techniques. For frequencies below 15 GHz, the power shall be averaged over the worst 4 kHz band. For frequencies 15 GHz and above, the power shall be averaged over the worst 1 MHz band. The worst 4 kHz and 1 MHz bands are defined as those having the highest power density within the assigned emission bandwidth.

**Input Requirement:** For earth, space, or terrestrial stations (including experimental stations) employing earth or space-station techniques, insert the maximum power density per Hz (in dBW) supplied to the antenna. For negative values, insert a minus sign (-) before the value.

**Example:**

321. 8

## **TRANSMITTER EQUIPMENT**

Data Items 340 through 349 are used for the Transmitter Equipment. When both fixed and mobile stations (FA and MA, FB and ML, etc.) are used, enter the fixed transmitter data first.

**Equipment Nomenclature .....340**

1,18 characters - 10 occurrences

Submitted to IRAC: yes      GMF tag: \*EQT

**Description:** Data Item 340 has two parts. The first part identifies the type of equipment (government, commercial, or unassigned) and the second part identifies either the standard military nomenclature or the commercial make and model number of the equipment at each specific transmitter station location. If both a military nomenclature and a commercial model number are assigned to the same equipment, the military nomenclature will be used.

**This data item is used in frequency nomination or interference analysis. Failure to provide data for this item will result in a possible reduction of analysis accuracy.**

**Input Requirement:** This data item is required. Enter the equipment type code followed by a comma and the equipment system or component nomenclature for the transmitter location. (If available, the system nomenclature is preferred rather than the component nomenclature; however, either is acceptable. Data Items 340 and 343 are interrelated, and an entry in Data Item 340 should be accompanied by a corresponding entry in Data Item 343, if known. If Data Item 343 is known, enter the nomenclature exactly as it is recorded in the Spectrum Certification System (SCS) database or J-12 document, DD Form 1494.) Enter one of the following equipment type codes:

<b>Code</b>	<b>Description</b>
<b>G -</b>	Government nomenclature
<b>C -</b>	Commercial model number
<b>U -</b>	Unassigned nomenclature.

After the equipment type code, enter a comma and then the nomenclature subject to the following:

- a. For a government equipment nomenclature, enter the standard military nomenclature.

**Examples:**

340. G,AN/GRC-103	(A system nomenclature)
340. G,T128	(A transmitter component nomenclature)

- b. If only a commercial model number is available, indicate the manufacturer of the equipment, using the manufacturer's code listed in Annex D to this appendix, followed by the model number. If no manufacturer code exists or is unknown, enter the full name of the manufacturer in Data Item 801. Do not leave a space between the comma and the manufacturer's code.

**Example:**

340. C,MOTH23FFN1130E	(A commercial handie-talkie manufactured by Motorola, model number H23FNN1130E. A partial nomenclature such as MOTH23 is incomplete since it applies to several different models of Motorola handie-talkies. The manufacturer's name and the complete model number should be obtained from data plates on equipment whenever possible.)
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- c. If the nomenclature includes a modification, insert MOD and a number, if applicable, immediately following the nomenclature. For the word MARK, insert MK immediately following the nomenclature.

**Examples:**

340. G,T238MK1
340. G,AN/MPS-36MOD

- d. If the transmitter does not have an assigned government nomenclature or commercial model number, enter the manufacturer's name and a brief description of the equipment in Data Item 801.

**Example:**

801. COLLINS RADIO, EXPERIMENTAL RADAR

**Number of Stations, System Name .....341**

5,29 characters - 3 occurrences

Submitted to IRAC: yes      GMF tag: \*NRM

**Description:** Data Item 341 is a two part data item. The first part identifies the number of transportable, land-mobile, and portable-type stations associated with the assignment. The second part identifies the name of the system involved. A station is one or more transmitters or receivers or a combination of transmitters and receivers, including the accessory equipment necessary at one location for carrying on a radio communication service. A system is considered two or more equipment having a common property, usually geographic, administrative, functional, or operational in nature.

**Input Requirement:** In the 30-50, 138-144, 148-149.9, 150.05-150.8, 162-174, and 406.1-420 MHz bands, enter the number of land mobile stations, ship stations, and transportable stations associated with the assignment (if desired this data may be entered on assignments in other bands or for aircraft stations). The number entered shall represent either the exact number of stations or a range of numbers as follows:

Number of Stations	Enter
1-10	10
11-30	30
31-100	100
101-300	300
301-1000	1000
1001-3000	3000
3001-10000	10000
Above 10000	Nearest 10000

If the exact number is to be recorded, and it is 10, 30, 100, 300, 1000, 3000, or a multiple of 10000, add one to the number to distinguish it from a figure that represents a range of numbers. System names shall be determined by the applicant and must not be longer than 18 characters. The word NET (or letter "N") may be used as the system name.

**Example:**

341. 1001,NET

Also, you may enter N if the assignment represents an entire system; enter S for all other cases. To enter a system name only, enter XXXXX, a comma, and the system name (See the last Example.).

**Examples:**

341. 31,N

341. XXXXX,RANGE COORDINATION

**TX Aircraft Nautical Mile Value.....342**

4 characters - 1 occurrence

Submitted to IRAC: no

GMF tag: \*RAD

**Description:** Data Item 342 contains the transmitter radius of an aeronautical assignment group for a frequency area of operation in nautical miles and is computer-generated from Data Item 306.

**Input Requirement:** This is a computer-generated output data item.

**Example:**  
342. 26

## **Equipment Certification Identification Number .....343**

15 characters - 10 occurrences

Submitted to IRAC: yes      GMF tag: \*AGN,JFAn-  
(n = the occurrence number in older records where there is more than one entry.)

**Description:** Data Item 343 indicates the certification number assigned to the transmitter equipment or system by the MCEB J-12 Working Group.

**Input Requirement:** Enter the equipment J-12 certification number (DD Form 1494) if known. The entry is formatted **CCCCC/nnnnn/nn** where **CCCCC** is the prefix which is a combination of spaces or characters. The seventh position is always a slash “/”. The **nnnnn** is the numerical portion of the entry which designates the number assigned to the piece of equipment. All five digits must be filled, use leading zeros when necessary. If there is more than one document for a particular piece of equipment, a revision number may be added to the basic number by adding either **/n** or **/nn**. (Data Items 340 and 343 are interrelated, and an entry in Data Item 343 must be accompanied by a corresponding entry in Data Item 340.) Note: If an SCS database record or a DD Form 1494 exists and is available, use it as the source from which to obtain the correct information to complete Item 340. The prefix for Data Item 343 will be formatted as follows:

<b>Prefix</b>	<b>Definition</b>
<b>J/F 12</b>	a US document that has not been approved for foreign release
<b>AC</b>	a US document approved for release in the Joint Forces Command area
<b>CC</b>	a US document approved for release in the Central Command area
<b>EC</b>	a US document approved for release in the European Command area but not through NATO channels
<b>PC</b>	a US document approved for release in the Pacific Command area
<b>SC</b>	a US document approved for release in the Southern Command area
<b>DA</b>	a US document approved for release direct to specific defense attaché office in a foreign nation
<b>C/F299</b>	a document approved for release to the CCEB nations (Australia, Canada, New Zealand, United Kingdom, and the United States of America).

### **Examples:**

343. J/F 12/01234      (A non releasable US J-12 document)  
343. PC /01234      (The first releasable J-12 document for a piece of equipment in the Pacific Command area)



If more than one document is to be released for a piece of equipment in a specific area, the prefix may also contain a right justified numeric starting at 2 and increasing sequentially for each different document that is to be coordinated in that area.

**Example:**

343. PC 2/07891/2 (The second releasable J-12 document in the Pacific

Data being submitted to NATO will be formatted as **CCCAAA/nnnnn/nn** where the first one or three characters (**C** or **CCC**) is the ITU country code of the submitting nation (as listed in Annex C to Appendix A). Unused characters (**CC**) and alpha numerics four through six (**AAA**) are used as a subordinate organization designation determined by the submitting nation. US organizations will use the format **USAECn/nnnnn/nn** when equipment spectrum certification support data is submitted to NATO.

**Prefix Definition**

**USAEC** The first US J-12 document that is approved for release in the European area and it is going to NATO for a piece of equipment

**USAEC3** The third US J-12 document that is approved for release in the European area to a NATO nation for a piece of equipment

**Example:**

343. USAEC2/00377 (The 2nd J-12 document approved for release in the European area to a NATO nation for a piece of equipment with J-12 number 00377.)

**Off-the-Shelf Equipment.....344**

6 characters - 10 occurrences

Submitted to IRAC: yes GMF tag: \*EQS

**Description:** Data Item 344 may be used for Land Mobile System (LMS) assignments in frequency bands 29.89-50.00, 150.8-174.0, 406.1-420.0 and 450-512 MHz. This data item may also be used for the following types of assignments: VOR1A, VOR1B, VOR2A, VOR2B, ILSLOC, or ILSGS in frequency bands 108.000-117.975 and 328.6-335.4 MHz.

**Input Requirement:** This data item is not used by DoD. Enter one of the following codes: LMS, VOR1A, VOR1B, VOR2A, VOR2B, ILSLOC, or ILSGS.

**Example:**

344. VOR1A

**Radar Tunability.....345**

2 characters - 1 occurrence

Submitted to IRAC: yes GMF tag: \*EQT

**Description:** Data Item 345 is a coded entry describing the tuning capabilities of both pulsed and nonpulsed radars.

**Input Requirement:** For all radars, enter one of the following codes:

<b>Code</b>	<b>Description</b>
-------------	--------------------

<b>FA</b>	- Frequency-agile radars that operate on various frequencies within a band, either specified or random mode
-----------	---

<b>FV</b>	- Radars that operate on a discrete frequency determined by the characteristics of a fixed magnetron or similar radio frequency generating device
-----------	---

<b>FX</b>	- Radars capable of operating on a single discrete frequency
-----------	--

<b>TC</b>	- Radars capable of being tuned to any frequency within the requested band
-----------	--

<b>TS</b>	- Radars capable of being tuned across the authorized or requested band in discrete steps or increments. This includes crystal control.
-----------	---

**Example:**

345. TC

**Pulse Duration .....346**

9 or 9-9 characters - 30 occurrences

Submitted to IRAC: yes      GMF tag: \*EQT following PD

**Description:** Data Item 346 indicates the width of the transmitted pulse (measured in microseconds or milliseconds at the half-power (3 dB) points) for all equipment using pulsed emission.

**Input Requirement:** For all stations using pulsed emissions, insert a numeric value(s) indicating the characteristic pulse duration(s) of the equipment at the half-power points. Pulse duration (PD) will be indicated in microseconds up to and including 999 microseconds and in milliseconds at one millisecond and above. Add the letter M at the end of the numeric value when expressed in milliseconds. Fractions may be shown to the nearest tenth by using a decimal. For equipment having a capability for continuously variable PDs over wide range(s), insert upper and lower numerical values separated by a dash.

**Example:**

346. 1	(Inserts or changes the PD values of 1, 3, and 5.6
346/2. 3	microseconds for the first three values and inserts or changes
346/3. 5.6	a 1 to 25 millisecond PD range for the fourth value.)
346/4. 1M-25M	

**Pulse Repetition Rate.....347**

9 or 9-9 characters - 30 occurrences

Submitted to IRAC: yes      GMF tag: \*PRR

**Description:** Data Item 347 indicates the number of pulses per second (PPS) for all equipment using pulsed emission.

**Input Requirement:** For all stations using pulsed emissions, enter the numeric value(s) for the pulse repetition rate(s) (PRRs) of the equipment. PRRs will be indicated in pulses per second (PPS) up to and including 999 PPS. At 1000 PPS and above enter the value in thousands of PPS followed by the letter K. . For equipment having a capability for continuously variable PRRs over a wide range(s), insert upper and lower numerical values separated by a dash.

**Example:**

347. 500 (Inserts the PRR values of 500, 750, and 1000 PPS  
 347/2. 750 for the first three entries and a 200 to 999 PPS  
 347/3. 1K range for the fourth value.)  
 347/4. 200-999

## Intermediate Frequency .....348

11 characters - 1 occurrence

Submitted to IRAC: no GMF tag: None

**Description:** Data Item 348 provides the intermediate frequency (an image frequency at any given point in the tuning range) value resulting from a frequency conversion into a fixed, lower carrier (before demodulation).

**Input Requirement:** Data Item 348 is required for EUCOM assignments. It is optional for all others. Precede the intermediate frequency value with unit indicators as follows:

**Code Description**

**K** - if frequency is less than 30 MHz  
**M** - if frequency is at least 30 MHz, but less than 100 GHz  
**G** - if frequency is at least 100 GHz, but less than 3 THz  
**T** - if frequency is 3 THz or greater.

**Example:**

348. M450

## Sidelobe Suppression .....349

1 character - 1 occurrence

Submitted to IRAC: no GMF tag: None

**Description:** Data Item 349 indicates whether a portion of the radiation from an antenna outside of the main beam and usually of much less intensity has been suppressed or eliminated. The suppression or elimination of unwanted signals or interference takes place by means of shielding, filtering, grounding, component relocation, or sometimes redesign of the equipment in use.

**Input Requirement:** Data Item 349 is required for EUCOM assignments. It is optional for all others. For radar assignments, enter one of the following codes:

**Y** - sidelobe suppressed  
**N** - sidelobe not suppressed

**Example:**  
349. Y

## TRANSMITTER ANTENNA DATA

Transmitter antenna data consists of Data Items 354 through 374. When both fixed and mobile stations (FA and MA, FC and MS, etc.) are used, enter the fixed antenna data first. Only the first occurrence of these antenna items is sent to NTIA; except, for Data Items 357, 360, and 363 when the antennas are on a space station. In this latter case a maximum of three occurrences are permitted.

### **Antenna Name .....354**

10 characters - 10 occurrences

Submitted to IRAC: yes      GMF tag: part of XAD

**Description:** Data Item 354 is the generic name for the type of antenna normally associated with the transmitter.

**Input Requirement:** This data item is required for transmitter antennas at terrestrial stations (except experimental and mobile stations) that operate at 29890 kHz and above. If necessary, abbreviate to 10 characters. An entry is not required if application is (a) below 29890 kHz, (b) space or earth station. This data item is required for all CENTCOM assignments.

**Examples:**

354. WHIP

354. PARABOLIC

### **Antenna Nomenclature.....355**

18 characters - 10 occurrences

Submitted to IRAC: yes      GMF tag: \*EQT following the \$ symbol

**Description:** Data Item 355 is the standard military nomenclature or commercial manufacturer's make and model number of the transmitter antennas.

**Input Requirement:** Data Item 355 is required except when it is part of a satellite transponder. Indicate antenna's nomenclature or commercial manufacturer's model number, but omit the model number if the antenna is part of a satellite transponder. If only a commercial model or nomenclature is known, enter the manufacturer's code (from Annex D to this appendix) followed by the antenna model number.

**Examples:**

355. AS102      (a government antenna nomenclature)

355. RCATVM000IA      (an RCA Corporation commercial antenna nomenclature)

### **Antenna Structure Height.....356**

3 characters - 10 occurrences

Submitted to IRAC: no                      GMF tag: None

**Description:** Data Item 356 identifies the overall height (in meters) of the transmitter antenna support structure above ground level.

**Input Requirement:** Data Item 356 is required for EUCOM assignments. It is optional for all others. Enter in meters the overall height of the antenna structure above ground level. This entry is not applicable to Mobile services.

**Example:**

356. 17

**Antenna Gain.....357**

4 characters - 10 occurrences

Submitted to IRAC: yes                      GMF tag: part of XAD: negative gains are in \*EGN, \*SGN

**Description:** Data Item 357 indicates the antenna gain (in decibels) with reference to an isotropic source (dBi) in the direction of maximum radiation.

**This data item is used in frequency nomination or interference analysis. Failure to provide data for this item will result in a default value being used with a possible reduction of analysis accuracy.**

**Input Requirement:** Enter the antenna gain (in dB with reference to an isotropic source) in the direction of maximum radiation. The gain may be omitted on applications for terrestrial stations below 29890 kHz if the gain is for other than fixed (FX) or aeronautical fixed (AX) stations in the 3000 to 29890 kHz band, or for terrestrial stations operating at 29890 kHz and above for experimental and mobile stations. For a negative gain (earth and space stations only), enter a dash before the value of the gain. This data item is required for CENTCOM assignments.

**Examples:**

357. -10

357. 20

**Antenna Elevation.....358**

5 characters - 10 occurrences

Submitted to IRAC: yes                      GMF tag: part of XAD

**Description:** Data Item 358 specifies the site's terrain elevation (in meters above mean sea level (AMSL)) at the base of a fixed station's transmitter antenna. If the antenna is installed on a structure such as a tower or a building, the site elevation is specified as the ground elevation at the base of the structure.

**This data item is used in frequency nomination or interference analysis. Failure to provide data for this item will result in a possible reduction of analysis accuracy.**

**Input Requirement:** Data Item 358 is required except for applications with frequencies below 29890 kHz. This data item may also be omitted for experimental and mobile terrestrial stations operating at 29890 kHz and above. Enter the site (terrain) elevation (at the base of the transmitting antenna structure) in meters AMSL.

**Example:**  
358. 980

**Antenna Feed Point Height.....359**

5 characters - 10 occurrences

Submitted to IRAC: yes      GMF tag: Part of XAD

**Description:** Data Item 359 indicates the distance (in meters) between the transmitter antenna's feedpoint and the terrain.

**This data item is used in frequency nomination or interference analysis. Failure to provide data for this item will result in a default value being used with a possible reduction of analysis accuracy.**

**Input Requirement:** Data Item 359 is required except for applications with frequencies below 29890 kHz. This data item may also be omitted for experimental and mobile terrestrial stations operating at 29890 kHz and above. Enter (in meters) the antenna feed point height above the terrain. In the case where the antenna is mounted pointing vertically to a reflector on the same structure, enter the height of the reflector above ground.

**Example:**  
359. 10                      (a terrestrial antenna)

For airborne terminals, enter the maximum operational altitude of the aircraft (in meters AMSL) . (For aircraft stations communicating with terrestrial stations within the US&P, also enter aircraft flight level **FL** information in Data Item 503 for use by the FAA.)

**Example:**  
359. 10668                      (an aircraft station at 35,000 feet)

**Antenna Horizontal Beamwidth.....360**

4 characters - 10 occurrences

Submitted to IRAC: yes      GMF tag: part of XAD, sometimes entered in \*EBW, \*SBW

**Description:** Data Item 360 describes the angular beamwidth (measured in degrees at the half-power (3 dB) points) of space, earth, or terrestrial station antennas (including experimental) employing earth or space-station techniques.

**Input Requirement:** For space, earth, or terrestrial stations (including experimental) employing space or earth station techniques, enter the antenna beamwidth (in degrees) at the half-power (-3 dB) points. For a fractional beamwidth, add a zero before the decimal.

**Examples:**

360. 0.5

360. 12

360. 17.2

**Antenna Vertical Beamwidth.....361**

3 characters - 10 occurrences

Submitted to IRAC: no                      GMF tag: None

**Description:** Data Item 361 indicates the transmitter antenna vertical beamwidth, measured in degrees and normally taken as the angle between the half-power points (-3 dB points) from the pattern of the antenna.

**Input Requirement:** Data Item 361 is required for EUCOM assignments. It is optional for all others. Enter the half-power vertical beamwidth in degrees, measured between the -3 dB points.

**Example:**

361. 23

**Antenna Orientation.....362**

3 or 3,3 or 3,3-3 or 3,3/3 characters - 10 occurrences

Submitted to IRAC: yes                      GMF tag: XAZ, Enter in XAD when this is a space assignment.

**Description:** Data Item 362 describes the physical direction or movement of the transmitter antenna. A second entry indicating the azimuth angle of the antenna's main beam may also be given. This second entry, given in degrees clockwise from true north, applies only to earth stations or terrestrial stations employing earth-station techniques.

**This data item is used in frequency nomination or interference analysis. Failure to provide data for this item will result in a default value being used with a possible reduction of analysis accuracy.**

**Input Requirement:** This data item is required for all earth, space, and terrestrial stations.

a. **Terrestrial Antenna:** Enter the three-digit azimuth in degrees from true north or one of the codes listed below for the transmitter antenna:

**Codes Description**

**ND**     -nondirectional

**R**       -rotating through 360 degrees

**S**       -fixed direction but steerable in the horizontal plane

**SSH**   -scanning horizontally through a limited sector

**SSV** -vertical scanning (nodding)  
**T** -tracking that can observe a moving object.

**Examples:**

362. 225  
 362. ND

**b. Earth Station:** For the antenna's minimum operating elevation enter the letter "V" followed by a twodigit degree value. Follow the vertical data with a comma and a three-digit azimuth in degrees from true north to the geostationary satellite. For two geostationary satellites, enter the three-digit azimuth to each satellite, separated by a slant bar. For more than two nongeostationary satellites, enter the maximum range of the azimuth angle as three-digit values separated by a dash.

**Examples:**

362. V09,133  
 362. V10,132/150  
 362. V12,122-160

**c. Space Station:** Enter either NB for narrow beam or EC for earth coverage.

**Example:**

362. EC

## Antenna Polarization .....363

1 character - 10 occurrences

Submitted to IRAC: yes      GMF tag: XAP

**Description:** Data Item 363 is a one-character code indicating the polarization of the electromagnetic radiation from the antenna.

**This data item is used in frequency nomination or interference analysis. Failure to provide data for this item will result in a default value being used with a possible reduction of analysis accuracy.**

**Input Requirement:** Enter the polarization of the antenna using one of the following symbols:

Code	Polarization
<b>A</b>	elliptic, left
<b>B</b>	elliptic, right
<b>D</b>	rotating
<b>E</b>	elliptical
<b>F</b>	45-degrees
<b>H</b>	fixed horizontal
<b>J</b>	linear
<b>L</b>	left-hand circular



<b>M</b>	oblique, angled left
<b>N</b>	oblique, angled right
<b>O</b>	oblique, angled, crossed
<b>R</b>	right-hand circular
<b>S</b>	horizontal and vertical
<b>T</b>	right and left-hand circular
<b>V</b>	fixed vertical
<b>X</b>	other or unknown.

Data Item 363 is required for each transmitter antenna as described below:

a. Assignments above 1000 MHz that must be coordinated (by the IRAC) with the Canadian Department of Communications-

b. Assignments to earth or space stations or to terrestrial stations (including experimental stations) employing earth or space-station techniques-

c. Assignments to terrestrial stations at 420 MHz and above except for the optional cases shown below:

- (1) experimental stations
- (2) mobile stations
- (3) meteorological aids in the 1660-1700 MHz band
- (4) TACAN/DME in the 960-1215 MHz band
- (5) aeronautical telemetry in the 1435-1535, 2200-2290, or 2310-2390 MHz bands.

**Example:**

363. V

**JSC Area Code .....373**

1 character - 1 occurrence

Submitted to IRAC: no                      GMF tag: None

**Description:** This is a one-character code computer-generated by the JSC from Data Item 300. It indicates a minor area of the world in which the transmitter is located and is used to reduce computer search time. The list of approved codes can be found in Annex E to this appendix.

**Input Requirement:** This is a JSC computer-generated output data item.

**Example:**

373. A

**ITU Region.....374**

1 character - 1 occurrence

Submitted to IRAC: no                      GMF tag: None

**Description:** Data Item 374 is a single integer (1, 2, or 3) indicating an ITU-designated region of the world in which the transmitter is located.

**Input Requirement:** This data item is computer-generated by the JSC for ITU records only.

**Example:**

374. 2

## RECEIVER LOCATION DATA

A maximum of 30 receiver locations are permitted in a frequency assignment record. Receiver location data consists of Data Items 400 through 408. When multiple occurrences of receiver location data occur, the data entries must correspond in the same sequence throughout; that is, proper alignment of multiple occurrence entries must be maintained so each specified data item will be associated with the correct receiver. Additionally, each set of equipment and antenna data must be associated with a particular occurrence of a receiver location site.

Example:

400. MD

401. ANNAPOLIS

...

400. PA,R02

401. HARRISBURG,R02

...

**State/Country .....400**

4 characters - 1 occurrence per receiver location

Submitted to IRAC: yes          GMF tag: RSC

**Description:** Data Item 400 is an authorized abbreviation for the state, country, or geographical area in which the receiving station is located. The approved list of abbreviations is in Annex C to this appendix.

**This data item is used in frequency nomination or interference analysis. Failure to provide data for this item will result in a possible reduction of analysis accuracy.**

**Input Requirement:** This data item is required. Enter the name or abbreviation of the state, country, or area in which the receiving antenna is located.

**Example A:**

400. NC                              (a single or first occurrence for a receiver)

**Example B:**

400. TN                              (an example of two receivers)

400. SPCE,R02

**Antenna Location.....401**

24 characters - 1 occurrence per receiver location

Submitted to IRAC: yes      GMF tag: RAL

**Description:** Data Item 401 is the name of the city, base, or geographical area of operation where the receiving antenna is actually located.

**This data item is used in frequency nomination or interference analysis. Failure to provide data for this item will result in a possible reduction of analysis accuracy. Note: if data items 400 and 401 contain the same value, the record is marked as an area assignment and may be excluded from frequency nomination or interference analysis consideration.**

**Input Requirement:** This data item is required. Enter the name of the city, base, or geographical area where the receiver antenna is located. Abbreviate the data entry if necessary; however, if an abbreviation is required, the entry should be spelled the same as that in the US Postal Zip Code Directory or applicable gazetteer. After a name has been entered the first time, all future entries for that same location should use the same spelling. If the receiver antenna location is the same as the entry in Data Item 400, the antenna location must be abbreviated using the same abbreviation entered in Data Item 400.

a. In addition to the above, the following standard abbreviations will be used even if the entry is less than 24 characters.

Abbreviation	Location Word
ARPT	airport
ARA	army area
CY	city
CGD	coast guard district
CO	county
DI	district
DIV	division
FT	fort
IAP	international airport
IS	island(s)
LNB	large navigational buoy
MT	mont, monte, mount(s)
MTN	mountain(s)
MAP	municipal airport
PG	proving ground(s)
PT	point
ST	saint

b. If the location name exceeds 24 characters after applying the standard abbreviation(s) listed in “a” above, and the entry has not been previously used, then shorten the entry to 24 characters and enter the full text in Data Item 801 for review by the assignment authority.

If an area of operation is involved, it may be described as a radius, in kilometers, extending from a given location. For example, if an assignment is for transmission anywhere within a 50-kilometer radius of Dallas, then insert DALLAS in this data item and the radius (50) in Data Item 306 (Authorized Radius). An area of operation may also be described by geographical coordinates. For example, if an assignment is for one or more land mobile stations operating south of 33 degrees north in the state of Arizona, then insert AZ in this data item and the coordinate data in Data Item 530 (Authorized Areas).

An area of operation within several states may also be described in this data item as US or USA, with the included or excluded states being shown in Data Item 531 (Authorized States). Similarly, US&P may be used if the area includes a possession. For locations described as an area of operation, note that operations might not occur in every square mile of the area concerned and that the area described might overlap into states not shown in Data Item 300 (State/Country).

While the data inserted shall normally be geographical names or descriptions, exceptions may be made for experimental operations, mobile operations where the state/country and antenna location data items are identical (such as PAC PAC, etc.), and/or space operations. For an assignment to an experimental station, other than one in space, or to a mobile station having identical state/country and antenna location names, words such as AIRCRAFT, BALLOONS, or SHIPS may be used as appropriate e.g., 300. PAC and 301. AIRCRAFT. For an assignment to a station aboard a geostationary satellite, insert GEOSTATIONARY. For an assignment to a station aboard a nongeostationary satellite, insert NONGEOSTATIONARY. For an assignment to a station located on a natural object in space, insert the name of the object, e.g., MOON.

**Examples:**

401. FT BRAGG

401. NASHVILLE,R05

401. NONGEOSTATIONARY

**Receiver Control .....402**

18 characters - 1 occurrence per receiver location

Submitted to IRAC: yes      GMF tag: RRC (Only the first eight characters are sent to NTIA.)

**Description:** Data Item 402 is used to identify the receiver operating unit that controls, either electrically or administratively, the receiver station when it is different from the operating unit entered in Data Item 207. Data Item 402 is not used by the Air Force.

**Input Requirement:** Enter the receiver operating unit or department (when it is different from the operating unit entered in Data Item 207) that controls, whether administratively or electronically, the receiving station.

**Example:**

402. P.C.

**Antenna Coordinates .....403**

15 characters - 1 occurrence per receiver location  
Submitted to IRAC: yes      GMF tag: RLA, RLG

**Description:** Data Item 403 is the WGS 84 datum latitude and longitude (expressed in degrees, minutes, and seconds) of the receiver antenna location(s) entered in Data Item 401.

**This data item is used in frequency nomination or interference analysis. Failure to provide data for this item will result in a possible reduction of analysis accuracy.**

**Input Requirement:** Data Item 403 is required except when the site named in Data Item 401 is an area of operation for which coordinates cannot be applied and for nongeostationary satellites. Enter geographical coordinates (degrees, minutes, and seconds) for the antenna location. If the seconds are not known, insert 00 for the seconds, except in the case of the NAVAIDS, geostationary satellites, and microwave facilities where seconds are required. Use leading zeros as appropriate for degrees, minutes, or seconds. Degrees latitude require two digits; degrees longitude require three digits. Enter N or S for latitude and E or W for longitude. If GEOSTATIONARY has been entered in Data Item 401, enter the latitude as 000000N and the longitudinal position of the satellite (in degrees, minutes, and seconds east or west). Note, when older maps are used, the coordinates may vary as much as 300-400 meters from locations determined by using DoD standard WGS 84 datum maps or Global Positioning System (GPS) equipment. Organizations are encouraged to obtain GPS equipment to determine the position of fixed antennas.

**Examples:**

403. 422615N1263228W

403. 000000N0925300W

**Call Sign .....404**

10 characters - 1 occurrence per receiver location

Submitted to IRAC: yes      GMF tag: ACL (Only the first eight characters are sent to NTIA.)

**Description:** Data Item 404 is the international call sign assigned to the receiving station. For navigational aids, this data item is used for the NAVAIDS identifier instead of a call sign.

**Input Requirement:** Data Item 404 is used for the international call sign assigned to the receiving station. Leave this data item blank if the call sign is either a local voice or tactical call sign, or if it is not applicable. For navigational aids, enter the NAVAIDS identifier.

**Example:**

404. WUH55

**Authorized Radius .....406**

4 characters - 1 occurrence per receiver location

Submitted to IRAC: yes      GMF tag: \*RAD

**Description:** Data Item 406 defines the area of operation for portable, mobile, or transportable receiver stations. This area is expressed as a radius in kilometers extending from the coordinates listed in Data Item 403.

**This data item is used in frequency nomination or interference analysis. Failure to provide data for this item will result in a possible reduction of analysis accuracy.**

**Input Requirement:** If Data Item 306 is blank and the receiving station is portable, mobile, or transportable and a circular area is used to describe the area of operation of the receiver, enter the radius (in kilometers from the coordinates entered in Data Item 403) to describe the area in which the receiving station will operate. For aircraft stations also enter radius data as part of Data Item 711.

(Note: When both fixed and mobile stations transmit on the same frequency, an entry in Data Item 406 indicates that the mobile station will be operating within the area described).

**Example:**

406. 250

**Path Length .....407**

5 characters - 1 occurrence per receiver location

Submitted to IRAC: no                      GMF tag: None

**Description:** Data Item 407 shows the distance (in kilometers) between the terrestrial transmitter and receiver stations.

**Input Requirement:** This data item is no longer used by DoD. This is an optional data item. Enter the distance in kilometers between the transmitter and the receiver.

**Example:**

407. 250

**Repeater Indicator .....408**

1 character - 1 occurrence per receiver location

Submitted to IRAC: yes                      GMF tag: \*RPT

**Description:** Data Item 408 indicates if the receiver station is used primarily as a repeater. A direct coupling between the station's receiver and the station's transmitter allows the incoming signal to be retransmitted exactly as received.

**Input Requirement:** Input for Data Item 408 is applicable only between 29890 kHz and 420 MHz. Enter the letter R for each receiver location when a station in the fixed or mobile service is used primarily as a repeater.

**Example:**

408. R,R02

## SPACE STATIONS

A maximum of 30 space-station receiver stations are permitted in a frequency assignment record. Data Items 415 through 419 are to be used for unique space station data. Leave Data Items 415 through 419 blank for geostationary satellites.

### **Equatorial Inclination Angle .....415**

4 characters - 1 occurrence per receiver location

Submitted to IRAC: yes      GMF tag: \*ORB preceding IN

**Description:** Data Item 415 indicates the angle at which the nongeostationary receiving satellite's orbit crosses the equator. A nongeostationary satellite is defined as one whose circular orbit does not lie in the plane of the earth's equator and that has a specific equatorial inclination, apogee, and perigee.

**Input Requirement:** Enter the equatorial inclination angle (in degrees) for nongeostationary space receiver stations.

**Example:**

415. 34.7

### **Apogee .....416**

5 characters - 1 occurrence per receiver location

Submitted to IRAC: yes      GMF tag: \*ORB preceding AP

**Description:** Data Item 416 indicates the point in the orbit of a nongeostationary receiver satellite where it is farthest from the earth.

**Input Requirement:** Enter the apogee (in kilometers) for nongeostationary space receiver stations.

**Example:**

416. 23100

### **Perigee .....417**

5 characters - 1 occurrence per receiver location

Submitted to IRAC: yes      GMF tag: \*ORB preceding PE

**Description:** Data Item 417 indicates the point in the orbit of a nongeostationary receiver satellite at which it is nearest to the earth.

**Input Requirement:** Enter the perigee (in kilometers) for nongeostationary space receiver stations.

**Example:**

417. 200

**Period of Orbit .....418**

7 characters - 1 occurrence per receiver location  
Submitted to IRAC: yes            GMF tag: \*ORB

**Description:** Data Item 418 indicates the time it takes for a nongeostationary receiver satellite to make one complete orbit.

**Input Requirement:** Enter the period of orbit for nongeostationary space receiver stations. If the period of orbit it is less than 24 hours, enter the time in hours followed by the letter H. If the period is 24 hours or more, enter the number of days followed by the letter D.

**Examples:**

418. 19.6H  
418. 7D

**Number of Satellites.....419**

2 characters - 1 occurrence per receiver location  
Submitted to IRAC: yes            GMF tag: \*ORB

**Description:** Data Item 419 indicates the number of nongeostationary receiving satellites in a system having similar orbital characteristics.

**Input Requirement:** Enter the number of nongeostationary satellites in the system.

**Example:**

419. 24

## RECEIVER EQUIPMENT

A maximum of 30 receiver locations are permitted in a frequency assignment record. When both fixed and mobile stations (FA and MA, FC and MS, etc.,) are used in Data Items 440 through 443, enter the fixed receiver data first.

**Equipment Nomenclature .....440**

1,18 characters - 10 occurrences per each receiver location  
Submitted to IRAC: yes            GMF tag: \*EQR

**Description:** Data Item 440 is a two-part data item. The first part identifies the type of equipment (government, commercial, or unassigned), and the second part identifies either the standard military nomenclature or the commercial make and model number of the equipment at each specific receiver station location. If both a military nomenclature and a commercial model number are assigned to the same equipment, the military nomenclature will be used.

**Input Requirement:** This data item is required. Enter an equipment type code followed by a comma and the equipment system or component nomenclature for the receiver location. (Data



Items 440 and 443 are interrelated, and an entry in Data Item 440 should be accompanied by a corresponding entry in Data Item 443, if known and if it is different from the entries in data items 340 and 343.) If Data Item 443 is known, enter the nomenclature exactly as it is recorded in the SCS database or J-12 document, DD Form 1494. Enter one of the following codes:

<b>Code</b>	<b>Description</b>
<b>G -</b>	Government nomenclature
<b>C -</b>	Commercial model number
<b>U -</b>	Unassigned nomenclature

After the equipment type code, enter a comma and then the nomenclature subject to the following (Do not leave a space following the comma.):

- a. For government equipment nomenclatures, enter the standard military nomenclature.

**Example:**

440/2. G,AN/ARC-121,R03 (The second receiver equipment at the third receiver location)

- b. If only a commercial model number is available, indicate the manufacturer of the equipment using the manufacturer's codes listed in Annex D to this appendix, followed by the model number. If no manufacturer code exists, enter the full name of the manufacturer in Data Item 801.

**Example:**

440/2. G,MOTH23FFN1130E

- c. If the nomenclature includes a modification, insert MOD and a number, if applicable, immediately following the nomenclature. For the word MARK, insert MK immediately following the nomenclature.

**Example:**

440. G,AN/MPS-36MOD

- d. If the receiver does not have an assigned government nomenclature or commercial model number, enter the manufacturer's name and a brief description of the equipment in Data Item 801.

**Example:**

801. COLLINS RADIO, EXPERIMENTAL RADAR

**Rx Aircraft Nautical Mile Value .....442**

4 characters - 1 occurrence per each receiver location

Submitted to IRAC: no GMF tag: \*RAD

**Description:** Data Item 442 contains the receiver radius of an aeronautical assignment group for a frequency area of operation in nautical miles and is generated from Data Item 406.

**Input Requirement:** This is a computer-generated output data item.

**Example:**  
442. 200

**Equipment Certification Identification Number .....443**

15 characters - 10 occurrences per each receiver location

Submitted to IRAC: no                      GMF tag: None

**Description:** Data Item 443 indicates the certification number assigned to the receiver equipment or system by the MCEB J-12 Working Group.

**Input Requirement:** Enter the equipment J-12 certification number (DD Form 1494), if known. The entry is formatted **CCCCC/nnnnn/nn** where **CCCCC** is the prefix which is a combination of spaces or characters. The seventh position is always a slash “/”. The **nnnnn** is the numerical portion of the entry which designates the number assigned to the piece of equipment. All five digits must be filled. Use leading zeros when necessary. If there is more than one document for a particular piece of equipment, a revision number may be added to the basic number by adding either **/n** or **/nn**. (Data Items 440 and 443 are interrelated, and an entry in Data Item 443 must be accompanied by a corresponding entry in Data Item 440.) Note: If an SCS database or a DD Form 1494 exists and is available, use it as the source from which to obtain the correct information to complete Item 440. The prefix for Data Item 443 will be formatted as follows:

**Prefix Definition**

<b>J/F 12</b>	a US document that has not been approved for foreign release
<b>AC</b>	a US document approved for release in the Joint Forces Atlantic Command area
<b>CC</b>	a US document approved for release in the Central Command area
<b>EC</b>	a US document approved for release in the European Command area but not through NATO channels
<b>PC</b>	a US document approved for release in the Pacific Command area
<b>SC</b>	a US document approved for release in the Southern Command area
<b>DA</b>	a US document approved for release direct to specific defense attaché office in a foreign nation
<b>C/F299</b>	a document approved for release to the CCEB nations (Australia, Canada, New Zealand, United Kingdom, and the United States of America).

**Examples:**

443. J/F 12/01234      (a non releasable US J-12 document)

443. PC /01234      (the first releasable J-12 document for a piece of equipment in the Pacific Command area)

If more than one document is to be released for a piece of equipment in a specific area, the prefix may also contain a right justified numeric starting at 2 and increasing sequentially for each different document that is to be coordinated in that area

**Example:**

443. PC 2/07891/2      (the second releasable J-12 document in the Pacific

## Command area for J-12 07891/2)

Data being submitted to NATO will be formatted as **CCCAAA/nnnnnn/nn** where the first one or three characters (**C** or **CCC**) is the ITU country code of the submitting nation (as listed in Annex C to Appendix A). Unused characters (**CC**) and alpha numerics four through six (**AAA**) are used as a subordinate organization designation determined by the submitting nation. US organizations will use the format **USAECn/nnnnnn/nn** when equipment spectrum certification support data is submitted to NATO.

### **Prefix      Definition**

**USAEC**      The first US J-12 document that is approved for release in the European area and it is going to NATO for a piece of equipment.

**USAEC3**    The third US J-12 document that is approved for release in the European area to a NATO nation for a piece of equipment

### **Example:**

443. USAEC2/00377      (The 2nd J-12 document approved for release in the European area to a NATO nation for a piece of equipment with J-12 number 00377)

## **RECEIVER ANTENNA DATA**

A maximum of 30 receiver locations are permitted in a frequency assignment record. Receiver antenna data consists of Data Items 454 through 463 is required for space and earth stations, fixed (point-to-point), and fixed station receivers or repeaters to which a mobile station transmits. (In other instances, receiver data is optional.) When both fixed and mobile stations (FA and MA, FC and MS, etc.) are used, enter the fixed antenna data first. Only the first occurrence of these antenna items is sent to NTIA; except, for Data Items 457, 460, and 463 when the antennas are on a space station. In this latter case a maximum of three occurrences are permitted.

**Antenna Name** .....454

10 characters - 10 occurrences per each receiver location

Submitted to IRAC: yes      GMF tag: part of RAD

**Description:** Data Item 454 is the generic name for the type of antenna.

**Input Requirement:** Enter the generic name for the type of the antenna. Data Item 454 is required for each receiver antenna for terrestrial stations, except experimental and mobile stations, that operate at 29890 kHz and above. If necessary, abbreviate the data entry to 10 characters. This entry not required if the application is (a) below 29890 kHz, (b) a space or earth-station, or (c) a mobile-to-mobile station.

### **Examples:**

454. WHIP,R02 (Two antennas at the second receiver location)  
454/2. DIPOLE,R02

**Antenna Nomenclature.....455**

18 characters - 10 occurrences per each receiver location

Submitted to IRAC: yes GMF tag: \*EQR following the \$ symbol

**Description:** Data Item 455 is the standard military nomenclature or commercial manufacturer's make and model number of the antenna.

**Input Requirement:** Data Item 455 is required except when it is part of a satellite transponder. Indicate antenna's military nomenclature or commercial manufacturer's model number. If only a commercial model or nomenclature is known, enter the manufacturer's code (from Annex C of this appendix) followed by the antenna model number.

**Examples:**

455. AS102 (Inserts a government antenna nomenclature)  
455. RCATVM000IA (Inserts RCA Corporation's commercial antenna nomenclature.)

**Antenna Structure Height.....456**

3 characters - 10 occurrences per each receiver location

Submitted to IRAC: no GMF tag: None

**Description:** Data Item 456 identifies the overall height in meters of the receiver antenna support structure above ground level.

**Input Requirement:** Data Item 456 is required for EUCOM assignments. It is optional for all others. Enter, in meters, the overall height of the antenna structure above ground level. This entry not applicable to mobile services.

**Example:**

456. 17

**Antenna Gain.....457**

4 characters - 10 occurrences per each receiver location

Submitted to IRAC: yes GMF tag: RAD; negative gains are in \*SGN, \*EGN

**Description:** Data Item 457 indicates the antenna gain in decibels with reference to an isotropic source (dBi) in the direction of maximum radiation.

**This data item is used in frequency nomination or interference analysis. Failure to provide data for this item will result in a default value being used with a possible reduction of analysis accuracy.**

**Input Requirement:** Enter the antenna gain (in dB with reference to an isotropic source) in the direction of maximum radiation. Gain may be omitted on applications for terrestrial stations below 29890 kHz if the gain is for other stations than fixed (FX) or aeronautical fixed (AX) stations in the 3000 to 29890 kHz band, or for terrestrial stations operating at 29890 kHz and above for experimental or mobile stations. For a negative gain (earth and space stations only), enter a dash before the value of gain.

**Examples:**

457. -27

457/1. 0,R02 (Gains for two antennas at the second receiver location)

457/2. 1,R02

**Antenna Elevation.....458**

5 characters - 10 occurrences per each receiver location

Submitted to IRAC: yes GMF tag: part of RAD

**Description:** Data Item 458 specifies the site's terrain elevation, in meters AMSL, at the base of a fixed station's receiver antenna. If the antenna is installed on a structure such as a tower or a building, the site elevation is specified as the ground elevation at the base of the structure.

**This data item is used in frequency nomination or interference analysis. Failure to provide data for this item will result in a possible reduction of analysis accuracy.**

**Input Requirement:** Data Item 458 is required except for applications for frequencies for terrestrial stations operating at 29890 kHz and above for experimental or mobile stations. Enter the site (terrain) elevation in meters AMSL.

**Example:**

458. 11

**Antenna Feed Point Height.....459**

5 characters - 10 occurrences per each receiver location

Submitted to IRAC: yes GMF tag: part of RAD

**Description:** Data Item 459 indicates the distance (in meters) between the receiver antenna's feedpoint and the terrain.

**This data item is used in frequency nomination or interference analysis. Failure to provide data for this item will result in a default value being used with a possible reduction of analysis accuracy.**

**Input Requirement:** Data Item 459 is required except for frequencies for applications below 29890 kHz, or for terrestrial stations operating at 29890 kHz and above for experimental or mobile stations. Enter in meters, the antenna feed-point height above the terrain. In the case where the antenna is mounted pointing vertically and the signal is received from a reflector on

the same structure, enter the height of the reflector above ground. For airborne terminals, enter the maximum operational altitude of the aircraft in meters AMSL. (For aircraft stations communicating with terrestrial stations within the US&P also enter aircraft flight level **FL** information in Data Item 503 for use by the FAA.)

**Examples:**

459. 10668                    (an aircraft antenna at 35,000 feet)  
459. 10                        (a terrestrial antenna)

**Antenna Horizontal Beamwidth.....460**

4 characters - 10 occurrences per each receiver location

Submitted to IRAC: yes            GMF tag: part of RAD, sometimes entered in \*EBW, \*SBW

**Description:** Data Item 460 describes the angular beamwidth (measured in degrees at the half-power (3 dB) points) of space, earth, or terrestrial stations antennas (including experimental) employing space or earth-station techniques.

**Input Requirement:** For space, earth, or terrestrial stations (including experimental) employing space or earth-station techniques, enter the antenna beamwidth (in degrees) at the half-power (-3 dB) points. For a fractional beamwidth, prefix the decimal with a zero. Data may be omitted for terrestrial stations operating at 29890 kHz and above for experimental or mobile stations.

**Examples:**

460. 0.5  
460. 12

**Antenna Vertical Beamwidth.....461**

3 characters - 10 occurrences per each receiver location

Submitted to IRAC: no            GMF tag: None

**Description:** Data Item 461 indicates the receiver antenna vertical beamwidth, (measured in degrees) and is normally taken as the angle between the half-power points (-3 dB points) from the pattern of the antenna.

**Input Requirement:** Data Item 461 is required for EUCOM assignments. It is optional for all others. Enter the half-power vertical beamwidth (in degrees).

**Example:**

461. 23

**Antenna Orientation.....462**

3 or 3,3 or 3,3-3 characters - 10 occurrences per each receiver location

Submitted to IRAC: yes            GMF tag: RAZ, Enter in RAD when this is a space assignment.

**Description:** Data Item 462 describes the physical direction or movement of the receiver antenna. A second entry indicating the azimuth angle of the antenna's main beam may also be

given. This second entry, (measured in degrees clockwise from true north), applies only to earth stations or terrestrial stations employing earth station techniques.

**This data item is used in frequency nomination or interference analysis. Failure to provide data for this item will result in a default value being used with a possible reduction of analysis accuracy.**

**Input Requirement:** This data item is required for all earth, space, and terrestrial stations.

**a. Terrestrial Antenna:** Enter the three-digit azimuth (in degrees) from north or enter one of the antenna codes listed below for the receiving antenna:

Code	Description
ND	- nondirectional
R	- rotating through 360 degrees
S	- fixed direction steerable in the horizontal plane
SSH	- scanning horizontally through a limited sector
SSV	- vertical scanning (nodding)
T	- tracking to observe a moving object.

**Examples:**

462. 225  
462. ND

**b. Earth Station:** Enter the antenna's minimum operating elevation (in degrees) consisting of a V followed by a two-digit value. Follow the vertical data with a comma and the three-digit azimuth (in degrees) from true north to the geostationary satellite. For nongeostationary satellites, or mobile or transportable stations communicating with geostationary satellites, enter the maximum range of the azimuth angle in three-digit values separated by a dash.

**Examples:**

462. V09,133  
462. V12,122-160

**c. Space Station:** Enter either NB for narrow beam or EC for earth coverage.

**Example:**

462. EC

**Antenna Polarization .....463**

1 character - 10 occurrences per each receiver location

Submitted to IRAC: yes      GMF tag: RAP

**Description:** Data Item 463 is a one-character code indicating the polarization of the electromagnetic radiation from the antenna.

**This data item is used in frequency nomination or interference analysis. Failure to provide data for this item will result in a default value being used with a possible reduction of analysis accuracy.**

**Input Requirement:** Data may be omitted for terrestrial stations operating at 29890 kHz and above for experimental or mobile stations. Enter the polarization of the antenna using one of the following symbols:

**Code Polarization**

<b>A</b>	elliptical, left
<b>B</b>	elliptical, right
<b>D</b>	rotating
<b>E</b>	elliptical
<b>F</b>	45-degree
<b>H</b>	fixed horizontal
<b>J</b>	linear
<b>L</b>	left-hand circular
<b>M</b>	oblique angled, left
<b>N</b>	oblique angled, right
<b>O</b>	oblique angled, crossed
<b>R</b>	right-hand circular
<b>S</b>	horizontal and vertical
<b>T</b>	right and left circular
<b>V</b>	fixed vertical
<b>X</b>	other or unknown.

Data Item 463 is required for each receiver antenna as described below:

a. assignments above 1000 MHz that must be coordinated (by the IRAC) with the Canadian Department of Communications.

b. assignments to earth or space stations or to terrestrial stations (including experimental stations) employing earth or space-station techniques.

c. assignments to terrestrial stations at 420 MHz and above except for the optional cases shown below:

- (1) experimental stations
- (2) mobile stations
- (3) meteorological aids in the 1660-1700 MHz band
- (4) TACAN/DME in the 960-1215 MHz band
- (5) aeronautical telemetry in the 1435-1535, 2200-2290, or 2310-2390 MHz bands.

**Example:**

463. R



## SPACE SYSTEMS

Data Items 470 through 472 are not used by the DoD.

### **Space Station Noise Temperature .....470**

4 characters - 10 occurrences per each receiver location

Submitted to IRAC: no            GMF tag: None

**Description:** Data Item 470 denotes the noise temperature of the receiving space stations.

**Input Requirement:** This data item is no longer used by DoD. Data Item 470 is required only for a space station(s). Enter the space station noise temperature in degrees Kelvin.

**Example:**

470. 200,R02

### **Earth Station System Noise Temperature .....471**

4 characters - 10 occurrences per each receiver location

Submitted to IRAC: no            GMF tag: None

**Description:** Data Item 471 denotes the noise temperature of the receiving earth station(s).

**Input Requirement:** This data item is no longer used by DoD. Data Item 471 is required only for a receiving earth station(s). Enter the earth-station system noise temperature in degrees Kelvin.

**Example:**

471. 60,R02

### **Equivalent Satellite Link Noise Temperature .....472**

4 characters - 10 occurrences per each receiver location

Submitted to IRAC: no            GMF tag: None

**Description:** Data Item 472 denotes the noise temperature at the input of the earth-station receiver corresponding to the radio-frequency noise power that produces the total observed noise at the output of the satellite link. This excludes noise due to interference coming from satellite links using other satellites and from terrestrial systems.

**Input Requirement:** This data item is no longer used by DoD. This entry is required for each earth station that receives signals from a geostationary space station using a simple frequency changing transponder. Enter noise temperature in degrees Kelvin, taking into consideration all satellite links received by the earth station on the frequency indicated.

**Example:**

472. 96,R03

## **JSC Area Code .....473**

1 character - 1 occurrence per each receiver location

Submitted to IRAC: no                      GMF tag: None

**Description:** This is a one-character code computer-generated by the JSC from Data Item 400. It indicates a minor area of the world in which the receiver is located and is used to reduce computer search time. The list of approved codes can be found in Annex E to this appendix.

**Input Requirement:** This is a JSC computer-generated output data item.

### **Example:**

473. A

## **SUPPLEMENTARY DETAILS**

Data Items 500 through 531 contain various coded or free-text remarks generally relating to the assignment as a whole or clarifying the authorized area of operations.

## **IRAC Notes .....500**

4 characters - 10 occurrences<sup>4</sup>

Submitted to IRAC: yes                      GMF tag: NTS

**Description:** Data Item 500 is a 4-character code identifying the IRAC note(s) (less M notes) applicable to the frequency assignment. The five types of notes which may be entered in this data item are: C (coordination), E (emission), L (limitation), P (priority), and S (special). M (minute) notes are entered only in Data Item 501 (Notes--Free Text). A complete listing of IRAC notes is contained in Annex F to this appendix.

**Input Requirement:** Data Item 500 is used for US&P IRAC GMF assignments only. Data Item 500 is a four-character code identifying the IRAC note(s) (less M notes) applicable to the frequency assignment. Five types of notes may be entered in this data item: C (coordination), E (emission), L (limitation), P (priority), and S (special). M (minute) notes are entered only in Data Item 501 (Notes Free-Text Comments).

### **Examples:**

500. L116

500/2. C002

## **Notes Free-Text Comments .....501**

35 characters - 30 occurrences<sup>4</sup>

Submitted to IRAC: yes                      GMF tag: \*NTS

**Description:** Data Item 501 is used to enter the M (minute) note(s) and complete the amplifying conditional comments as agreed to by the IRAC FAS. A complete listing of IRAC M notes is contained in Annex F to this appendix.

**Input Requirement:** For each M note, include the M note, a comma, and the associated amplifying text. Do not enter more than one M-note per data line.

**Examples:**

501. M003,WRCTV,WASHINGTON,DC (a two-line entry)  
501/2. M003,J SMITH 202-841-5121

**Description of Requirement .....502**

1440 Characters - 1 occurrence

Submitted to IRAC: no GMF tag: None

**Description:** Data Item 502 is used to record those agency remarks which, while pertinent to the assignment, are not intended to be part of the application processed through the IRAC. These remarks, therefore, will be excluded from the GMF.

**Input Requirement:** This data item is required in CENTCOM assignments. It is optional in all others. Enter as many lines of remarks as necessary; however, precede each line with the data item identifier 502. Order of occurrence identifiers are not permitted, e.g., 502/2. Do not split words between lines, and do not exceed 72 characters per data entry line. Do not duplicate data entered in Data Items 503/520. Since the entire data entry is considered one paragraph, each line must contain the same classification as the highest classification of any line in the paragraph. To modify existing data, delete the entire entry and replace it with new data as shown in Example A. Example B shows a change in the data on line one of a two line requirement. Example C shows changing data on lines two and three of a three line requirement.

**Example A:**

502. \$  
502. THIS ASSIGNMENT PROVIDES TWO ADDITIONAL VOICE CHANNELS  
502. DCS 77BB01 DURING CONTINGENCY SITUATIONS.

**Example B:**

502. \$  
502. NEW DATA FOR LINE ONE  
502. ORIGINAL DATA FOR LINE TWO

**Example C:**

502. \$  
502. ORIGINAL DATA FOR LINE ONE  
502. NEW DATA FOR LINE TWO  
502. NEW DATA FOR LINE THREE

**Agency Free-Text Comments.....503**

35 characters - 30 occurrences<sup>4</sup>

Submitted to IRAC: yes GMF tag: \*AGN

**Description:** Data Item 503 is used to record agency remarks in the applications processed through the IRAC. These remarks will be included in the GMF. Remarks not intended for the GMF must be entered in Data Item 502 (Description of Requirement).

**Input Requirement:** Enter up to 35 characters per line and precede each line with the data item number. Remarks **not** intended for the IRAC should be entered in Data Item 502.

**Example A:**

503. ACME ELECTRONIC CORP TO SUPPORT IN (inserts four lines of  
503/2. DEVELOPMENT OF EXP TELECOMMAND agency text)  
503/3. SYSTEM. FINAL TESTING TO BE HELD AT  
503/4. EXP TEST FACILITY.

**Example B:**

503/2. DEV OF EXP TELECOMMAND AND TRACKING  
(In Example A above, this action would replace the second line of agency text.)

**Example C:**

503/5. USAF AND USN SPONSORED. (adds a line to Example A)

Flight levels are required for FAA coordination of frequency assignments within the US&P. Flight level data will be entered in hundreds (100s) of feet. The data entry will be formatted as: FL (followed by three digits). Leading zeros are required.

**Examples:**

503. FL160 (This means 16,000 feet.)  
503. FL035 (This means 3,500 feet.)

**FAS Agenda or OUS&P Comments.....504**

72 characters - 5 occurrences<sup>4</sup>

Submitted to IRAC: yes GMF tag: FAS

**Description:** Data Item 504 contains information that is not required to be recorded in the GMF. The data entered will appear in the FAS Agenda Action File (ACTF) file and the FRRS permanent proposal records only. It will not appear in the GMF or FRRS databases. Note that when records are mass changed by NTIA, the reason for the mass change is listed in this field and the information is stored in the FRRS database.

**Input Requirement:** Data Item 504 is used whenever it is necessary to provide information to the FAS members reviewing application agendas. Data Item 504 is **not** entered into the GMF or FRRS databases.

**Example A:** (A one-line example)

504. FIVE YEAR REVIEW UPDATE

**Example B:** (A two-line example)

504. THIS IS A RENEWAL OF AN EXISTING AUTHORIZATION  
504/2. ASSIGNMENT INADVERTENTLY ALLOWED TO EXPIRE

## **NATO Pooled Frequency Code Number .....505**

5 characters - 1 occurrence

Submitted to IRAC: no                      GMF tag: None

**Description:** Data Item 505 provides data on communications associated with ground transmitters/receivers as well as aircraft operating in the 225-400 MHz frequency band.

**Input Requirement:** Data Item 505 is required for EUCOM and JFCOM assignments. For air/ground/air and air to air requirements in the 225-400 MHz band, enter a Type Special Assignment code. Use of this data item is optional for all other bands.

### **Code    Type Special Assignment**

**B** - air/ground/air requirements

**A** - air to air requirements

**P** - air/ground/air pool requirements

Upon approval of EUCOM assignments only, the Frequency Management Sub-committee (FMSC) will assign, from the groupings below, a code number identifying the type and nationality of a frequency pool:

<b>Code Number</b>	<b>Description</b>
0001 - 0199	United States
0700 - 0999	Special Operations Pools
2000 - 2299	Command and Miscellaneous Pools

### **Example data input:**

505. P

### **Example of data returned from FMSC:**

505. P0803

## **Paired Frequency .....506**

11,10,12 characters - 30 occurrences

Submitted to IRAC: yes                      GMF tag: \*PRD

**Description:** Data Item 506 has three parts. The first part contains the repeater station transmit or receive frequency associated with the transmitter frequency described in this record. The second part contains the agency serial number associated with that paired frequency and the third part contains a brief associated comment.

**Input Requirement:** Data Item 506 is mandatory:

(1) for assignments where the transmitter or a receiver is used primarily as part of a repeater in the frequency ranges 29.89 - 50 MHz (Government exclusive ranges), 138.00 – 144.00 MHz, 148.00 - 149.90 MHz, 150.05 - 150.80 MHz, 162.00 – 174.00 MHz, and 406.10 – 420.00 MHz

(2) where SFAF Data Item 113 contains the suffix “**R**” added to the station class or

(3) where SFAF Data Item 408 equals “**R**”.

Enter the transmitting or receiving frequency (in the format prescribed in Data Item 110, Frequency) of the repeater station paired with this record followed by a comma, the serial number (in the format prescribed in Data Item 102, Agency Serial Number) of the assignment record with the associated frequency followed by a comma, and one of the two following comments: If the paired frequency is a transmitting frequency, use “**RPT OUT**”. If the paired frequency is a receiving frequency, use “**RPT IN**”.

This data item is optional to describe any duplex operation, enter the frequency, serial number, and “**DUPX PAIRING**”. For frequency diversity operations, enter the frequency, serial number, and “**FREQ DIVRSTY**”.

a. For a first example using a simple repeater, assume Record AR 097123 is not for a repeater and it is paired with Record AR 097124, that represents a repeater station. In this instance record AR 097123 would have a 506 data entry that would indicate record AR 097124’s frequency, agency serial number, and the comment “**RPT OUT**”. Using the same example, record AR 097124 would have a 506 data entry that would indicate record AR 097123’s frequency, agency serial number, and the comment “**RPT IN**”.

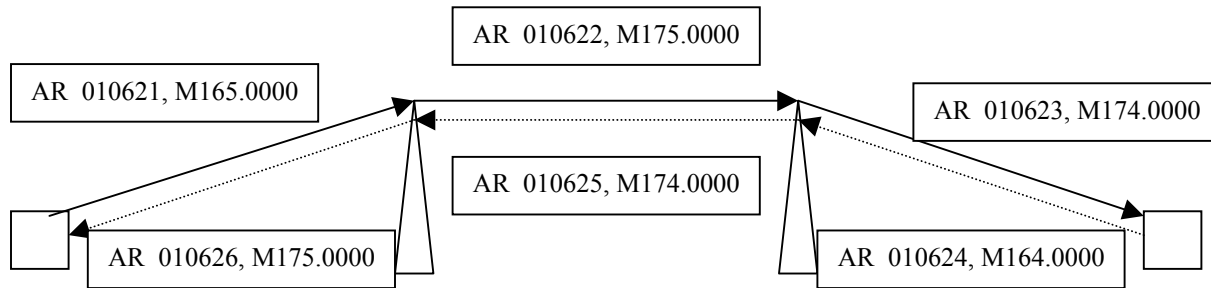
**Examples:**

506. M163.4375,AR 097124,RPT OUT (the AR 097123 record entry)

506. M173.4375,AR 097123,RPT IN (the AR 097124 record entry)

b. In a second more complex example using two repeaters (See diagram below), see how this data item is used to identify the record from which a repeating frequency is received, the record to which a repeating frequency is connected to, or a record that is duplex paired with a record in a repeating system.

## MULTICAST REPEATER SYSTEM



### Examples:

506. M175.0000,AR 010622,RPT OUT	(first entry for AR 010621)
506/2. M175.0000,AR 010626,DUPX PAIRING	(second entry for AR 010621)
506. M165.0000,AR 010621,RPT IN	(first entry for AR 010622)
506/2. M174.0000,AR 010623,RPT OUT	(second entry for AR 010622)
506/3. M174.0000,AR 010625,DUPX PAIRING	(third entry for AR 010622)
506. M175.0000,AR 010622,RPT IN	(first entry for AR 010623)
506/2. M164.0000,AR 010624,DUPX PAIRING	(second entry for AR 010623)
506. M174.0000,AR 010625,RPT OUT	(first entry for AR 010624)
506/2. M174.0000,AR 010623,DUPX PAIRING	(second entry for AR 010624)
506. M164.0000,AR 010624,RPT IN	(first entry for AR 010625)
506/2. M175.0000,AR 010626,RPT OUT	(second entry for AR 010625)
506/3. M175.0000,AR 010622,DUPX PAIRING	(third entry for AR 010625)
506. M174.0000,AR 010625,RPT IN	(first entry for AR 010626)
506/2. M165.0000,AR 010621,DUPX PAIRING	(second entry for AR 010626)

c. Use this data item to identify a duplex record e.g., those used in HF or microwave systems. The data required is the frequency of the paired record, a comma, the serial number of the paired record, a comma, and DUPX PAIRING.

### Examples:

506. M8000,AF 010527,DUPX PAIRING  
 506/2. M9000,AF 010528,DUPX PAIRING

d. Frequency Diversity data on the same link would be entered as follows:

### Examples:

506. M8000,AF 010527, FREQ DIVRSTY  
 506/2. M9000,AF 010528, FREQ DIVRSTY

## FUNCTION IDENTIFIERS

The costs associated with the operational use of the spectrum are of increasing concern to the DoD. The function identifier fields permit the analysis of spectrum usage by major, intermediate, and detailed function identifiers. The standardization of data entries in Data Items 511 and 512 are controlled at the MCEB level. Any suggested changes, additions, or deletions will be forwarded to the MCEB, Spectrum Operations Permanent Working Group (SOPWG). These changes can be addressed via E-mail to [frs@jsc.mil](mailto:frs@jsc.mil). Some data entries are standardized for Data Item 513 and are also controlled by the MCEB, SOPWG. However, COCOMs and MILDEPs may also set up any “**standard**” data entries to capture information about any function identifier not listed in the Detailed Function Identifier column in the table in Annex I to this appendix. Periodically, the MCEB SOPWG will review new “**standard**” entries to determine if they should be added to the MCEB standard lists.

### **Major Function Identifier ..... 511**

30 characters - 1 occurrence

Submitted to IRAC: yes      GMF tag: \*MFI

**Description:** Data Item 511 identifies the major (or primary) function of the frequency assignment.

**Input Requirement:** This entry is required for all DoD assignments. It may be used to eliminate entries in Data Items 503 (Free-text), 502 (Description of Requirement), and 520 (IRAC Supplementary Details) to reduce redundant database entries when the function and purpose of the assignment is adequately described in Data Items 511, 512, and 513. Select an entry from the approved standardized Major Function Identifier column in Annex I to this appendix. Each of the following examples is related in the same order to each example in Data Items 512 and 513.

#### **Examples:**

511. AIR OPERATIONS

511. GROUND OPERATIONS

511. C3

### **Intermediate Function Identifier ..... 512**

30 characters - 1 occurrence

Submitted to IRAC: yes      GMF tag: \*IFI

**Description:** Data Item 512 identifies the intermediate function of the frequency assignment.

**Input Requirement:** This entry is required for all DoD assignments. It will be used to reflect those function identifiers that are subordinate to the Major Function Identifier listed in Data Item 511. Select an entry from the approved standardized Intermediate Function Identifier column in Annex I to this appendix. Each of the following examples is related in the same order to each example in Data Items 511 and 513.



**Examples:**

512. AIR TRAFFIC CONTROL

512. INFANTRY

512. DATA LINK

**Detailed Function Identifier.....513**

30 characters - 5 occurrences

Submitted to IRAC: yes      GMF tag: \*DFI

**Description:** Data Item 513 identifies the detailed function of the frequency assignment.

**Input Requirement:** This entry is required for all DoD assignments if the function identifier is listed in the Detailed Function Identifier column in the table in Annex I to this Appendix. If a new entry is needed, forward a request through the applicable COCOM or MILDEP to the MCEB SOPWG. New entries cannot be entered in this item until approved by the SOPWG. Each of the following examples is related in the same order to each example in Data Items 511 and 512.

**Examples:**

513. GROUND CONTROL

513. AIRBORNE INFANTRY

513. TADIL-C

(an example with two Detailed Function Identifiers)

513/2. JTIDS/MIDS

**Supplementary Details.....520**

1080 characters - 1 occurrence<sup>3</sup>

Submitted to IRAC: yes      GMF tag: SUP

**Description:** Data Item 520 includes the following data, if applicable, plus any additional amplifying information that would facilitate processing:

- a. doppler shift, if a significant factor in the particular system
- b. a general description of the assignment requirement (applies to experimental stations)
- c. sounder justification
- d. coordination data
- e. refer to NTIA manual, Chapter 9, for further details.

**Input Requirement:** This is a free-text data item. This data item is required on several assignments, e.g., experimental stations, transportable receiving earth stations, frequency diversity, sounders, etc. Order of occurrence identifiers are **not** permitted, e.g., 520/2. To modify existing data, either delete the entire entry and replace it with new data as shown in Example A, or add new data to the existing text as shown in Example B. To delete an entire entry enter 520. \$. Additional details may be found in the NTIA Manual. Each line should be preceded by data item identifier 520. Do not split words between lines, and do not exceed 72 characters per line (including the data item number, punctuation, and spaces). Enter as many data lines as necessary

to give a general description of the requirement, indicating specific use of the frequency(ies) or band(s).

**Example A:**

520. \$

520. COORDINATED WITH FAA AS0406

(The dollar sign deletes the existing entry, regardless of the number of lines, and permits new data to be added.)

**Example B:**

520. COORDINATED WITH AF AND NAVY

(Inserts new entry or adds to existing entry for Renewal, or Modification type of transactions. See paragraph 3f(2) at the front of the document.)

**Transition and Narrow Band Planning Data .....521**

8,13 characters - 1 occurrence

Submitted to IRAC: yes      GMF tag: \*TRN

**Description:** Data Item 521 has two parts. Part one contains the date the assignment is planned to be transitioned to comply with narrow band transition plans (NTIA Manual sections 4.3.7A, 4.3.9, or 5.3.5.2) and part two will contain the new frequency if the assignment is to be moved to a new frequency to comply with NTIA Manual narrow band channel plans. The notation concerning the transition may be of two types:

- a. First, the assignment will be modified to meet the narrow band requirements; however, the assignment will remain on the same frequency.
- b. In the second instance, the assignment will be moved to a new frequency and the existing record must be deleted.

**Input Requirement:** Data Item 521 is required in all assignments in frequency bands 138-150.8 MHz, 162-174 MHz, and 406.1-420 MHz if the assignment data is not in compliance with the narrow band requirements of the NTIA Manual (sections 4.3.7A, 4.3.9, or 5.3.5.2) except as noted below. Enter data in accordance with the following:

- a. If Data Item 521 is to be used to note that a record will be modified on or about a planned date to comply with narrow band transitioning, enter the date in the format (YYYYMMDD). See example A.
- b. If the assignment is to be transitioned to a new frequency to comply with narrow banding, enter the date of the planned transition in the format YYYYMMDD followed by a comma and the new frequency in the format defined in Data Item 110, Frequency. See example B.
- c. If the assignment is to be transitioned to a new frequency to comply with narrow banding and the planned date to transition is unknown, enter a comma and the new frequency in the same format as defined in Data Item 110, Frequency. See example C. When the transition date becomes known, the record shall be updated as specified in paragraph b above.

Exceptions\*: The above standards do not apply to:

1. military equipment used for tactical and/or training operations
2. FM wireless microphone systems whose mean output power does not exceed 0.1 watt
3. equipment operating on channels designated for low power systems as set forth in Sections 4.3.8, 4.3.8a, 4.3.10, 4.3.10a, and 5.5.8 of the NTIA Manual
4. existing equipment used for Command Destruct systems in the 406.1-420 MHz bands.

\*Exception records must contain record note **S189** in Data Item 500.

**Example A:**

521. 20051231

(The assignment will be modified by 31 December 2005 to meet narrow band transition requirements.)

**Example B:**

521. 20041231,M167.2875

(The assignment will be transitioned to M167.2875 by 31 Dec 2004.)

**Example C:**

521. ,M412.7375

(The new transition frequency M412.7375 is known; however, the planned date of the transition is unknown.)

**Authorized Areas .....530**

3,35 characters - 30 occurrences

Submitted to IRAC: yes      GMF tag: \*ART, \*ARR, \*ARB

**Description:** Data Item 530 has two parts. Part one contains a 3-character coded data entry, and the second part describes geographical areas that cannot be described in Data Items 306/406 (Authorized Radius) or Data Item 531 (Authorized States).

**Input Requirement:** If the antenna location in Data Item 301 and/or Data Item 401 is the name of a state/country or USA, a part of a state/country or parts of several contiguous states/countries may be entered here (for a particular transmitter or receiver location. Do not enter data here if Data Item 531 is used). The following identifying codes are available:

<b>Code</b>	<b>Description</b>
<b>ART</b> -	for transmitting in area shown
<b>ARR</b> -	for receiving in area shown
<b>ARB</b> -	for transmitting and receiving in area shown.

For each entry, enter the identifying code followed by a comma and the data concerning the area, using state/country abbreviations as shown in Annex C to this appendix. Use the letter N for north, S for south, E for east, and W for west when describing areas by latitude and longitude. Separate data elements by a comma.

**Examples:**

530. ART,SW WY,NE UT,NW CO

530. ARR,S OF 33N

530. ART,S OF 40N, E OF 095W

## **Authorized States .....531**

3,35 characters - 6 occurrences

Submitted to IRAC: yes                      GMF tag: \*LST, \*LSR, \*LSB, \*EST, \*ESR, \*ESB

**Description:** For assignments within the US&P, Data Item 531 is used to include or exclude states whenever the transmitter and/or receiver antenna location is specified as an area of operation within several states.

**Input Requirement:** If the antenna location in Data Item 301 and/or Data Item 401 is specified as US, USA, or US&P for an area of operation within several states, enter the states to be included or excluded (for a particular transmitter or receiver location). Do not enter data here if Data Item 530 is used. Precede each line with the data item number. Order of occurrence identifiers are not permitted e.g. 531/2. To modify existing data, either delete the entire entry and replace it with new data as shown in Example A, or add new data to the existing text as shown in Example B. The following identifying codes are available:

<b>Code</b>	<b>Description</b>
<b>ESB -</b>	for transmitting and receiving in all states except those listed
<b>ESR -</b>	for receiving in all states except those listed
<b>EST -</b>	for transmitting in all states except those listed
<b>LSB -</b>	for transmitting and receiving in the states listed
<b>LSR -</b>	for receiving in the states listed
<b>LST -</b>	for transmitting in the states listed.

Precede each line with one of the above identifying codes and a comma. Separate entries with commas as shown in the example. Use state abbreviations as shown in Annex C to this appendix.

**Example A:**                      (deletes all existing data and replaces it with a one-line data entry)  
531. \$  
531. LST,CA,OR,WA

**Example B:**                      (creates a new two-line data entry or adds two lines to existing data)  
531. EST,MD,VA,NC,SC,GA,FL,AL,TN,NY,PA  
531. EST,VT,MI,WI,MN

## **OTHER ASSIGNMENT IDENTIFIERS**

Data Items 701 through 716 are used to identify the major headquarters' Frequency Action Officer and miscellaneous reference numbers relating to the assignment coordination process. Some data items are used to code assignments as various types of functional groupings or provide additional technical data for certain aeronautical assignments.

## **Frequency Action Officer .....701**

3 characters - 1 occurrence

Submitted to IRAC: yes\*                      GMF tag: \*AGN, FAO-

**Description:** Data Item 701 is a MILDEP code identifying the person or group responsible for the assignment. This item is not used if Data Item 010 equals A.

**Input Requirement:** This data item is required for Air Force assignments. It is optional for all others.

**Examples:**

701. 322

701. T04

\*For Army, Navy, and Air Force records only

**Control/Request Number .....702**

15 characters - 1 occurrence

Submitted to IRAC: yes\*      GMF tag: \*AGN, CNO-

**Description:** Data Item 702 is the control/request number that allows subordinate organizations to track specific frequency applications.

**Input Requirement:** Enter the organizational control number as directed by the responsible agency or COCOM.

**Air Force MAJCOMs:** Use the MAJCOM symbol followed by a space, the two-digit number for the year, a dash, and the annual sequential number.

**Example:**

702. ACC 81-007

**Army Organizations in the Continental US (CONUS) Reporting to the Army Spectrum Management Office:** Use the two-digit-letter code for the AFC or command, followed by the last digit of the current year and a sequential four-digit annual number. Use leading zeros as needed.

**Example:**

702. AC81011

**Navy Organizations:** Enter the control/request number.

**Example:**

702. N-431-88

**Europe:** Use the EUCOM control number. Use leading zeros as needed.

**Example:**

702. USAREUR81-266

**CENTCOM Organizations:** Enter Control/Request Number assigned by the component or CJTF spectrum management office.

**JFCOM Organizations:** The Joint Frequency Management Office, Atlantic (JFMOLANT) will either assign the control/request number or provide guidance for creating a unique organizational numbering sequence.

**NORTHCOM Organizations:** The Joint Frequency Management Office, North (JFMO NORTH) will either assign the control/request number or provide guidance for creating a unique organizational numbering sequence.

**Example:**

702. NNC 2003-2001

\*For Navy, and Air Force records only

**Type of Service .....704**

1 character - 1 occurrence

Submitted to IRAC: yes      GMF tag: \*AGN,TOS- (This tag is being phased out.)

**Description:** Data Item 704 is a code used to identify the type of service/circuit involved.

**Input Requirement:** Data Item 704 is required for EUCOM and JFCOM assignments. Enter the type of circuit code from the following list:

**Code    Description**

- S** - simplex
- D** - duplex
- H** - semiduplex
- Z** - simplex net
- T** - one directional transmission
- B** - broadcast
- M** - simultaneous broadcast
- N** - radionavigation
- L** - radiolocation
- R** - reception only
- X** - radio determination.

**Example:**

704. N

**PACOM Complement/FMSC Function Number .....707**

8 characters - 20 occurrences

Submitted to IRAC: no      GMF tag: None

**Description:** Data Item 707 identifies a grouping of frequencies having a like or similar use in the PACOM area. It also identifies the function number(s) used by the Frequency Management Sub-Committee (FMSC) to specify the operational use of frequencies in the EUCOM area.

**Input Requirement:** PACOM - Enter the number used to identify a family grouping of frequencies that have a similar use. See Example A. EUCOM – Enter the function number(s) used by the FMSC to specify the operational use of frequencies. See Example B.

**Example A:**

707. 34120 (PACOM)

**Example B:**

707. 100 (EUCOM)

707/2. 101 (EUCOM – second occurrence)

**Host Country Docket Number .....710**

35 characters - 10 occurrences

Submitted to IRAC: no GMF tag: None

**Description:** Data Item 710 records the docket number assigned by the host (soil) country to the frequency authorization.

**Input Requirement:** Enter the docket/case if a number is assigned by the soil (host) country to the frequency authorization.

**Examples:**

710. F84-171 (a German docket number)

710. 2AAZ0191 (a NATO FMSC docket number)

**Aeronautical Service Range and Height .....711**

6 characters - 1 occurrence

Submitted to IRAC: no GMF tag: None

**Description:** Data Item 711 is the flight level and service radius of aeronautical navigational aids and air traffic control assignments for frequencies above 29,890 kHz and low frequency beacons.

**Input Requirement:** Provide the flight level and service range of all aeronautical navigational aids and air traffic control assignments for frequencies above 29890 kHz and for low-frequency beacons. Enter service range (in nautical miles) using three digits followed by flight level (in thousands of feet) using three digits. The example indicates a 250-nautical mile range at 50000 feet. **(This type of data is also entered in radius Data Items 306/406 for use by analysis models and 503 as a flight level, in hundreds of feet for use by FAA within the US&P.)**

**Example:**

711. 250050

**Transmitter FMSC MRFL Number .....715**

14 characters - 1 occurrence

Submitted to IRAC: no                      GMF tag: None

**Description:** Data Item 715 records the assignment serial number as registered in the FMSC Master Radio Frequency List (MRFL).

**Input Requirement:** Required in all assignments forwarded to NATO. Enter the transmitter FMSC MRFL serial number of the frequency assignment as recorded in the FMSC MRFL. The entry is formatted: **CCCSYYYYnnnnn** or **CSSSYYYYnnnnn** where:

<b>CCC or C =</b>	ITU county code, e.g., "BEL" for Belgium or "G " for UK
<b>S or SSS =</b>	one or three character locally assigned code, nationally managed, padded with spaces as necessary, can contain any combination of letters, digits or spaces
<b>YYYY =</b>	four digit calendar year
<b>nnnnn =</b>	5 digits sequential number starting at 00001 every year.

**Examples:**

715. USAR199900371

715. G AF200501372

**Usage Code.....716**

1 character - 1 occurrence

Submitted to IRAC: no                      GMF tag: None

**Description:** Data Item 716 is a coded entry denoting the usage and category of circuits.

**Input Requirement:** Data Item 716 is required for all DoD assignments. Enter one of the following codes:

**Code              Description**

- 1** - wartime circuits required to be operated or to be ready for operation in peacetime (terminals are to be fully equipped with the appropriate installation and personnel)
- 2** - wartime circuits that have a limited capability in peacetime for exchanging traffic between the planned terminals (equipment and personnel are shared with other Usage Code 2 circuits)
- 3** - required for wartime only (equipment is, or will be, available)
- 4** - required for occasional and temporary usage for training exercises or maneuver purposes
- 5** - required for the deployment phase of contingency operations
- 6** - required for the employment phase of contingency operations
- 7** - required for peacetime only.

**Example:**



## ADDITIONAL INFORMATION

This data category contains those data elements that were not included in any of the other specific data categories.

### **Coordination Data/Remarks.....801**

60 characters 20 occurrences

Submitted to IRAC: no                      GMF tag: None

**Description:** Data Item 801 indicates the agencies with which coordination has been effected and contains any other free-text remarks appropriate for processing the assignment.

**Input Requirement:** List agencies with which coordination has been effected (e.g., FAA, GAFC, etc.) and include any remarks that may be appropriate for processing the assignment. After approval of an assignment, Data Item 801 is not retained in the FRRS database. Order of occurrence identifiers are not permitted e.g., 801/2.

**Example:**

801. GAFC 021200Z AUG 82

### **Requestor Data.....803**

60 characters - 1 occurrence

Submitted to IRAC: no                      GMF tag: None

**Description:** Data Item 803 reflects the name and DSN number of the individual submitting the request.

**Input Requirement:** This data item is required. Provide name and telephone number of individual submitting request.

**Example:**

803. BROWN, 281-3824

### **Tuning Range/Tuning Increments/Number of Frequencies.....804**

60 characters - 30 occurrences

Submitted to IRAC: no                      GMF tag: None

**Description:** Data Item 804 indicates the tuning range, the tuning increments of the equipment used on this record and the number of frequencies being requested for an assignment or an allotment.

**Input Requirement:** Data Item 804 is required for EUCCOM and CENTCOM assignments. It is optional for all others. Enter the tuning range of the equipment followed by a comma. See Data Item 110 to format the frequency range. Also enter the channel spacing to indicate the largest

tuning increment of the frequency(ies) listed in Data Item 110. Format the channel spacing in the same manner as the first 4 characters of the Emission Designator (e.g., 25K0, 12K5). Finally, in those instances when more than one frequency is required enter a comma after the channel spacing followed by the number of frequencies required for a particular exercise, operation, or instance. See example A. Order of occurrence identifiers are not permitted, e.g., 804/2. To modify existing data, delete the entire entry and replace it with new data as shown in Example B. Example C shows how a user might request an allotment of two frequencies in the M300-400 frequency range and an allotment of 50 frequencies in the M30-88 frequency range.

**Example A:**

804. M250-300,100K

(an initial data entry in a record requesting a frequency between M225 and M300 on 100K channelization.)

**Example B:**

804. \$

804. M225-275,50K0

(deletes all existing data in Example A and replaces it with a one-line data entry)

**Example C:**

804. M300-400,50K0,2

804. M30-88,25K0,50

(creates a two-line data entry requesting 2 frequencies between M300 and M400 with a 50 KHZ channelization spacing and 50 frequencies between M30 and M88 with a 25 KHZ channel spacing.

**Date Response Required.....805**

8 characters - 1 occurrence

Submitted to IRAC: no

GMF tag: None

**Description:** Data Item 805 is the date when the user wishes to be notified the assignment(s) is approved or disapproved.

**Input Requirement:** Data Item 805 is required only for frequency proposals to be processed within the European theater. It is optional for all others. Except in an unusual circumstance, this date should be at least 65 days from the date of the message release or initial request date. Enter the date as YYYYMMDD. After approval of an assignment, Data Item 805 is not retained in the FRRS database.

**Example:**

805. 19820315

**Indication if Host Nominations are Acceptable .....806**

60 characters - 10 occurrences

Submitted to IRAC: no

GMF tag: None

**Description:** Data Item 806 indicates the user's acceptance or rejection of host-nation nominations for substitute frequencies entered in Data Item 110.

**Input Requirement:** Data Item 806 is required for EUCOM assignments. It is optional for all others. Enter **YES** followed by a statement indicating band limitations and channelization requirements if host nation nominations are acceptable to fulfill the requirement. Enter **NO** followed by the reason why no other nominated frequencies can be used. Data Item 806 is not stored in the FRRS database. Order of occurrence identifiers are not permitted, e.g., 806/2. After approval of an assignment, Data Item 806 is not retained in the FRRS database.

**Example:**

806. YES, BAND LIMITATIONS ARE...

**Frequencies to be Deleted.....807**

60 characters - 10 occurrences

Submitted to IRAC: no                      GMF tag: None

**Description:** Data Item 807 lists the frequency(ies) that can be deleted upon assignment of the requested frequencies. Also provide host docket numbers, case numbers, and MRFL numbers when available.

**Input Requirement:** Data Item 807 is required only on frequency proposals to be processed within the European theater. List the frequencies that can be deleted upon assignment of the requested frequencies along with EUCOM Frequency Management Field Office Brussels, Belgium and/or case numbers and MRFL numbers, when available. Leave this data item blank if no frequencies will be deleted. Data Item 807 is not stored in the FRRS database. Order of occurrence identifiers are not permitted, e.g., 807/2. This item is not stored in the FRRS database.

**Examples:**

807. K14.5,USAREUR-81-266,

807. F61-836,131101

**Record Status.....901**

1 character - 1 occurrence

Submitted to IRAC: no                      GMF tag: None

**Description:** Data Item 901 provides the status of an assignment in the master database.

**Input Requirement:** This data item is used by DoD only. Enter one of the following codes:

Code	Description
A -	active
I -	inactive.

**Example:**

901. A

**Proposal Status .....903**

4 characters - 20 occurrences

Submitted to IRAC: no                      GMF tag: None

**Description:** Data Item 903 is no longer used.

**Input Requirement:** None

**Status Date .....904**

8 characters - 20 occurrences

Submitted to IRAC: no                      GMF tag: None

**Description:** Data Item 904 is no longer used.

**Input Requirement:** None

**Proposal Date-Time-Group.....905**

14 characters - 1 occurrence

Submitted to IRAC: no                      GMF tag: None

**Description:** Data Item 905 is no longer used.

**Input Requirement:** None.

**Originator .....906**

66 characters - 1 occurrence

Submitted to IRAC: no                      GMF tag: None

**Description:** Data Item 906 is no longer used.

**Input Requirement:** None.

**Validation Status.....907**

1 character - 1 occurrence

Submitted to IRAC: no                      GMF tag: None

**Description:** Data Item 907 indicates the proposal's validation status.

**Input Requirement:** Data Item 907 is a computer-generated software data item. The following codes are used:

Code	Description
------	-------------

**Y** record passed validation  
**N** record did not pass validation  
**O** record did not pass validation and the lack of validation was overridden  
**(Blank)** not validated.

**Example:**  
 907. Y

## Exercise Project.....910

20 characters - 1 occurrence

Submitted to IRAC: no                      GMF tag: None

**Description:** Data Item 910 provides the Project or Exercise name.

**Input Requirement:** This data item is required in CENTCOM assignments and optional in all others.

**Example:**  
 910. GUARDRAIL

## Date of Last Transaction .....911

8 characters - 1 occurrence

Submitted to IRAC: no                      GMF tag: None

**Description:** Data Item 911 provides the date the record was last modified by a database transaction. This data item changes whenever any aspect of a record is changed, such as when an administrative modification, modification, or delete transaction is posted to the FRRS database record.

**Input Requirement:** This data item is computer-generated as YYYYMMDD by the FRRS computer.

**Example:**  
 911. 19920212

## Data Source Indicator.....924

4 characters - 1 occurrence

Submitted to IRAC: no                      GMF tag: None

**Description:** Data Item 924 is used to identify the source or organization from which the data record was received:

Code	Description
<b>FMSC</b>	- FMSC/MRFL data from NATO
<b>CAN</b>	- Industry Canada
<b>FCC</b>	- Federal Communications Commission

**FRRS** - Frequency Resource Record System  
**GMF** - Government Master File  
**ITU** - International Telecommunication Union  
**RA** - radio astronomy data from the National Research Council.

**Input Requirement:** Data Item 924 is a computer-generated output data item.

**Example:**  
 924. ITU

## **Semi-Bandwidth ..... 926**

12 characters - 1 occurrence

Submitted to IRAC: no                      GMF tag: None

**Description:** Data Item 926 represents, in kilohertz, half of the emission bandwidth of the largest bandwidth given for the assignment.

**Input Requirement:** This data item is no longer used by DoD. Data Item 926 is a JSC computer-generated output data item.

**Example:**  
 926. 50

## **Date of Entry ..... 927**

8 characters - 1 occurrence

Submitted to IRAC: no                      GMF tag: None

**Description:** Data Item 927 is the date (YYYYMMDD) the assignment was initially entered into the FRRS database system.

**Input Requirement:** Data Item 927 is a computer-generated output data item.

**Example:**  
 927. 19951230

## **Date of Receipt ..... 928**

8 characters - 1 occurrence

Submitted to IRAC: no                      GMF tag: None

**Description:** This is the Date of receipt (YYYYMMDD) of the most recent transaction at the database.

**Input Requirement:** Data Item 928 is a computer-generated output data item.

**Example:**  
 928. 19951229

**PC ID .....950**

10 characters - 1 occurrence

Submitted to IRAC: no                      GMF tag: None

**Description:** Data Item 950 identifies the PC at which the transaction was originated. Normally, this occurs at organizational levels below where the serial number can be assigned.

**Input Requirement:** This data item is no longer used by DoD. Input to this data item is required whenever there is no serial number in the record, and this input will normally be formatted as ACCCYNNNN where:

**ACCC**    =    Up to four (4) characters, numerics or spaces unique to each PC. The assignment of these unique characters to a particular PC will be managed by the COCOM or MILDEP having jurisdiction over the area/organization submitting PC-originated proposals.

The first character “A” is coded from the table below:

**Code    Description**

**A** -Army organizations within CONUS  
**N** -Navy organizations within CONUS  
**F** -Air Force organizations within CONUS  
**P** -Organizations in the PACOM area  
**L** -Organizations in the JFCOM area  
**E** -Organizations in the EUCOM area  
**S** -Organizations in the SOUTHCOM area  
**C** -Organizations in the CENTCOM area

The next three characters “CCC” are uniquely assigned by the COCOM or MILDEP.

**YY**       =    Last two digits of the calendar year  
**NNNN** =    Individual unique number assigned to each proposal

**Example:**

950. L4MD920001

**IRAC Security Classification .....952**

1 character - 1 occurrence

Submitted to IRAC: yes                      GMF tag: CLA

**Description:** Data Item 952 is the classification of the GMF record that is maintained by NTIA.

**Input Requirement:** Data Item 952 is computer-generated for DoD organizations. It is only used internal to the JSC for administrative record management only.

**Code Definition**

**U** - UNCLASSIFIED

**C** - CONFIDENTIAL

**S** - SECRET

**Example:**

952. C

**IRAC Declassification Date.....953**

10 characters - 1 occurrence

Submitted to IRAC: yes      GMF tag: CDD

**Description:** Data Item 953 is the declassification date (DEYYYYMMDD) of a GMF record.

**Input Requirement:** Data Item 953 is computer-generated for DoD organizations. It is only used internal to the JSC for administrative record management.

**Example:**

953. DE19951230

**Agency Action Number .....956**

10 characters - 1 occurrence

Submitted to IRAC: yes      GMF tag: ACN

**Description:** Data Item 956 is a data entry used to track transactions. It is formatted with 4 characters (AAAA) selected by the submitting organization, followed by a two digit year (YY) and a four digit sequential number (nnnn).

**Input Requirement:** Data Item 956 is optional and assigned by the user entering the transaction into the system. This data item is required for Army Serial Numbered records.

**Example:**

956. J    970001

**Review Year.....957**

4 characters - 1 occurrence

Submitted to IRAC: yes      GMF tag: RYR

**Description:** Data Item 957 contains the year (in the format YYYY) that the assignment was originally entered into the GMF or last modified in the GMF.

**Input Requirement:** Data Item 957 is computer generated. This field is used ONLY when no other changes are required (i.e., all parameters as listed are up-to-date), and it is necessary to indicate a review of an assignment has been completed (see Annex F of the NTIA Manual). If any change is being submitted to any character of any data field, this item is not submitted. After approval of an assignment, this data item is not retained in the FRRS database.



**Example:**  
957. 1997

**Routine Agenda Item.....958**

1 character - 1 occurrence

Submitted to IRAC: yes            GMF tag: RTN

**Description:** Data Item 958 is a coded data entry that indicates the type of NTIA FAS agenda on which the application will be processed.

**Input Requirement:** Data Item 958 is computer-generated by NTIA for its internal processing of frequency assignment applications. It is an output data item only.

Code	Description
R -	routine Application
(Blank) -	regular Application
A -	AAG Application
M -	MAG Application.

**Example:**  
958. M

**Circuit Remarks.....959**

40 characters - 30 occurrences

Submitted to IRAC: yes            GMF tag: REM

**Description:** Data Item 959 is used by NTIA to record any additional data to be submitted by the applicant that can not be accommodated in any of the other GMF data items. Upon approval of the record by NTIA, the circuit remarks stored in the GMF are also stored in the FRRS database. The data is also parsed and stored in the appropriate individual SFAF data items.

**Input Requirement:** Data Item 959 is computer-generated from individual data items when the record is sent to NTIA.

**Examples:**  
959. REM01 \*ARB,39N43N098W099W  
959/3. REM03 \*ART,3915N4320N10016W1012W

**Note:** GMF tags \*CLC and \*CLS are used in the GMF to identify the classification of data items in a frequency assignment proposal or approved record. These two tags do not have individual SFAF item numbers. The classification information contained in parenthesis immediately following any SFAF data item number is used as the basis for the automated preparation of these two items.

**FCC File Number.....963**

22 characters - 1 occurrence

Submitted to IRAC: yes            GMF tag: \*FLN

**Description:** Data Item 963 is an FCC-assigned file number, issued to non-government stations operating on government frequencies or government stations operating on non-government frequencies, which is unique to each FCC license.

**Input Requirement:** Data Item 963 is an output data item computer-generated by the FCC.

**Example:**

963. SES-LIC-20020611-00939

**TX Aircraft Altitude .....964**

3 characters - 10 occurrences

Submitted to IRAC: no            GMF tag: XAD for airborne satellite terminals

**Description:** Data Item 964 contains the maximum operational altitude of an aircraft with a transmitter earth station aboard it. The entry will be in thousands of feet.

**Input Requirement:** This data item is no longer used by DoD. Data Item 964 is computer-generated. It is converted from the entry in Data Item 359. After approval of an assignment, this data item is not retained in the FRRS database.

**Example:**

964. 3            (for 3,000 feet)

**RX Aircraft Altitude .....965**

3 characters - 10 occurrences

Submitted to IRAC: no            GMF tag: RAD for airborne satellite terminals

**Description:** Data Item 965 contains the maximum operational altitude of an aircraft with a receiver earth station aboard it. The entry will be in thousands of feet.

**Input Requirement:** This data item is no longer used by DoD. Data Item 965 is computer-generated. It is converted from the entry in Data Item 459. This data item is not stored in the FRRS database.

**Example:**

965. 50            (for 50,000 feet)

## **JCEOI RELATED ITEMS**

SFAF data item numbers 982-999 are used to support the integration of standard spectrum management software and the new Joint Communications-Electronics Operation Instruction (JCEOI) software, Joint Automated CEOI System (JACS). Data Items 982 through 998 are interrelated in that an entry in any of the data items is related to an entry in any of the other data

items. Not all items have to be filled to complete the information needed for a net in the JCEOI Master Net List. These items are not stored in the FRRS database.

**JCEOI Line Number.....982**

5 characters – 1 occurrence

Submitted to IRAC: no

**Description:** Data Item 982 is the line number associated with a JCEOI master net list entry.

**Input Requirement:** None. This is a JACS computer-generated output data item. This item is not stored in the FRRS database.

**Examples:**

982. 00001

982. 01373

**JCEOI Master Net List Name.....983**

16 characters – 1 occurrence

Submitted to IRAC: no

**Description:** Data Item 983 is the name entered in the JCEOI Master Net List in JACS. This is a required item for the JCEOI.

**Input Requirement:** Enter the name of the net the assigned frequency will support. Revised Battlefield Electronics CEOI System / Revised DTD (Data Transmission Device) Software (RBECS/RDS) will only support 16 characters. Common Tier Three (CT3) will only support 15 characters and will truncate the last character. This item is not stored in the FRRS database.

**Examples:**

983. COCOM1

983. JTF17

983. 3BDE CMD

**Net Frequency Range.....984**

11-11 characters – 1 occurrence

Submitted to IRAC: no

**Description:** Data Item 984 is the frequency range within which the JACS software must select a frequency for the net listed in Data Item 983 (JCEOI Master Net List Name).

**Input Requirement:** This is a required item for the JCEOI. (The format is the same as SFAF Data Item 110 frequency band (11-11) entries.) Enter the frequency band from which the net operating frequency will be selected by the JACS software. This item is not stored in the FRRS database.

**Examples:**

984. K3000-29999  
984. M30-79.975  
984. M88000-G110

## **Joint Restricted Frequency List (JRFL) Protection Code .....985**

1 or 1/2 (1 slash 2) characters – 1 occurrence

Submitted to IRAC: no

**Description:** Data Item 985 may have two elements. The first element contains the JRFL protection code that is applicable to the frequency assigned to this net. The first data element is followed by a slant bar and a locally assigned priority code.

(Note: When this data item is blank the frequency assigned to this net will not be included in the JRFL.)

**Input Requirement:** If the frequency assigned to this net is to be included in the JRFL, enter the protection code from the list below that was requested for the corresponding master net list entry. If required, then enter a slash followed by the assigned priority code.

### **Code Description**

- T** - Taboo. Safety of life, stop buzzer, etc. If priorities are used, Taboo should always be A1.
- G** - Guarded. Frequencies with interest to the Intelligence sections.
- P** - Protected. Frequencies that have importance to the operation, but may be jammed because of geographic or time separation.

The locally assigned priority code consists of a letter followed by a number in the range A1 through Z9, with A1 being the highest. This item is not stored in the FRRS database.

### **Examples:**

985. T  
985. G/F2  
985. P/A4

## **Net Tactical Call Word.....986**

15 characters – 1 occurrence

Submitted to IRAC: no

**Description:** Data Item 986 is the tactical call word assigned to the net. A tactical call word is defined as a pronounceable word which identifies a communications facility, a command, an authority, an activity, or a unit.

**Input Requirement:** Enter a Y if requesting a tactical call word, or enter the call word if a specific word is requested. The word assigned by JACS may not be the same as requested. This item is not stored in the FRRS database.

### **Examples:**

986. Y  
986. ALL AMERICAN  
986. EAGLE

**Net Tactical Call Sign.....987**

3 characters – 1 occurrence  
Submitted to IRAC: no

**Description:** Data Item 987 is the tactical call sign assigned to the net. A call sign is defined as any combination of alphanumeric characters or phonetically pronounceable characters (trigraph), which identifies a communications facility, a command, an authority, an activity or unit. It is used primarily for establishing and maintaining communications.

**Input Requirement:** Enter a Y if requesting a tactical call sign. The call sign will be assigned by JACS, if requested. This item is not stored in the FRRS database.

**Example:**  
987. Y

**Net Tactical Air Designator (TAD).....988**

5 characters – 1 occurrence  
Submitted to IRAC: no

**Description:** Data Item 988 is the TAD assigned to the net. A tactical air designator is a series of alphanumeric characters which can be used to identify frequencies and nets. These designators are usually listed in the Air Tasking Order (ATO) to prevent inadvertent disclosure of classified information.

**Input Requirement:** Enter the TAD, if known. This item is not stored in the FRRS database.

**Examples:**  
988. 3  
988. 115

**Net Color Word.....989**

16 characters – 1 occurrence  
Submitted to IRAC: no

**Description:** Data Item 989 is the Color Word assigned to the net. A tactical color word is a series of alpha characters which can be used to identify frequencies and nets. These words are usually listed in the Air Tasking Order (ATO) to prevent inadvertent disclosure of classified information.

**Input Requirement:** Enter the Color Word, if known. This item must contain information if data is entered in Data Item 990 Color Number. This item is not stored in the FRRS database.

**Examples:**

989. BLUE

989. ORANGE

**Net Color Number.....990**

2 characters – 1 occurrence

Submitted to IRAC: no

**Description:** Data Item 990 contains a two digit Color Number assigned to the net. These numbers are usually listed in the Air Tasking Order (ATO) to prevent inadvertent disclosure of classified information.

**Input Requirement:** Enter the Color Number, if known. A leading zero is required for numbers less than ten. This data item must contain information if data is entered in Data Item 989 Color Word. This item is not stored in the FRRS database.

**Examples:**

990. 22

990. 03

**Net Restoral Priority.....991**

3 characters – 1 occurrence

Submitted to IRAC: no

**Description:** Data Item 991 is the restoral priority assigned to the net. The first character identifies the type of network, and the second and third numbers prioritize the net within that type of network. This priority will be established by the JTF commander.

**Input Requirement:** Enter the restoral priority of the net, if any. This item is not stored in the FRRS database.

**Examples:**

991. H15

991. A01

**Net Push Number.....992**

3 characters – 1 occurrence

Submitted to IRAC: no

**Description:** Data Item 992 is the Push Number assigned to the net. A push number is a series of alphanumeric characters assigned to a frequency to assist the aircrew in moving to an alternate frequency.

**Input Requirement:** Enter the Push Number of the net, if any. This item is not stored in the FRRS database.

**Examples:**

992. 15  
992. 123

**Band Usage.....993**

1 characters – 1 occurrence  
Submitted to IRAC: no

**Description:** Data Item 993 is the Band Usage of the net, if required. This character defines the frequency band label the net uses.

**Input Requirement:** Enter the corresponding Band Usage of the net, if required. This item is not stored in the FRRS database.

Code	Description
H –	Hertz
K –	KiloHertz
M -	MegaHertz.

**Examples:**

993. K  
993. M

**Check Sum.....994**

1 characters – 1 occurrence  
Submitted to IRAC: no

**Description:** Data Item 994 is the check sum for the frequency. The frequency check sum is the units digit of the number derived from adding together the individual digits in the frequency. For example, the check sum for M235.625 would be 3 (2+3+5+6+2+5=23).

**Input Requirement:** None. This is a JACS computer-generated output data item.

**Examples:**

994. 3  
994. 8

**COMSEC Keymat.....995**

15 characters – 1 occurrence  
Submitted to IRAC: no

**Description:** Data Item 995 contains the short title of the Communications Security (COMSEC) keying materiel (Keymat) that is used for the net.

**Input Requirement:** Enter the COMSEC Keymat for the net, if required. This item is not stored in the FRRS database.

**Examples:**

995. USKAT 619

995. USKAT 3120

**Circuit Type, Line Item, Group Category.....996**

8 characters – 1 occurrence

Submitted to IRAC: no

**Description:** Data Item 996 contains the Circuit Type (first two alpha characters), Line Item (next three digits), and Group Category (last three alphanumeric positions).

**Input Requirement:** Enter the Circuit Type, Line Item, and Group Category for the net, if required. This item is not stored in the FRRS database.

**Examples:**

996. AO164ZA1

996. ED253HO3

**JCEOI Special Net Instructions.....997**

63 characters – 1 occurrence

Submitted to IRAC: no

**Description:** Data Item 997 contains any special instructions applicable to the net.

**Input Requirement:** Enter any applicable special instructions pertaining to the net listed in Data Item 983, JCEOI Master Net List Name. This item is not stored in the FRRS database.

**Examples:**

997. AOR WIDE SAR EXERCISE OPERATIONS

997. SPECINST

997. RESTORAL

**Net Notes.....998**

3 characters – 1 occurrence

Submitted to IRAC: no

**Description:** Data Item 998 contains the Net Notes associated with any Special Instructions (SPECINST).

**Input Requirement:** Enter the corresponding abbreviation for the SPECINST, if required. If this data item is to be used, Data Item 997 must contain SPECINST. This item is not stored in the FRRS database.

**Examples:**

998. Y11



998. AA1

**Guard Requirements.....999**

20 characters – 50 occurrences

Submitted to IRAC: no

**Description:** Data Item 999 is a listing of organizations required to guard (monitor) the net.

**Input Requirement:** Enter organizations required to guard this net, if any. This item is not stored in the FRRS database.

**Examples:**

999. JTF CMD CTR

999/2. MARFOR CMD CTR

999/3. AFFOR CMD CTR

999/4. G-NMZ,TR,CV8

## ANNEX A - LIST OF STATION CLASSES WITH DEFINITIONS

1. The following list of station class codes are authorized for use in Data Item 113. Where a definition is followed by the parenthetical expression "(RR)," it is an indication that the definition is in the ITU Radio Regulations.

2. The suffix "R" shall be added to the established class of station (STC) symbol only if the station is to be used primarily as a repeater in the bands:

29.89-50.00 MHz (exclusive government bands).  
138.00-144.00 MHz.  
148.00-149.90 MHz.  
150.05-150.80 MHz.  
162.00-174.00 MHz.  
406.10-420.00 MHz.

For this purpose, a repeater consists of a radio transmitter, a radio receiver and coupling between the two so as to retransmit unchanged in intelligence the received signal.

3. The following definitions of Stations and associated Station Class (STC-see Section 9.8.2, Para. 15a. through 15-c.) symbols are used on U.S. government frequency assignments as applicable.

### Stations - Alphabetical By Service

**FAB**--Aeronautical Broadcast Station: An aeronautical station which makes scheduled broadcasts of meteorological information and notices to airmen. (In certain instances, an aeronautical broadcast station may be placed on board a ship.)

**TB**--Aeronautical Earth Station: An earth station in the fixed-satellite service or in some cases in the aeronautical mobile-satellite service located at a specified fixed point on land to provide a feeder link for the aeronautical mobile-satellite service. (RR)

**AX**--Aeronautical Fixed Station: A station in the aeronautical fixed service. (RR)

**ALA**--Aeronautical Marker Beacon Station: A radionavigation land station in the aeronautical radionavigation service which employs a marker beacon.

**EJ**--Aeronautical Mobile-Satellite Space Station: A space station in the aeronautical mobile-satellite service. (RR)

**ALC**--Aeronautical Radar Beacon (racon) Station: A land station in the aeronautical radionavigation service which employs a radar beacon (racon).

**ALB**--Aeronautical Radiobeacon Station: A radiobeacon station in the aeronautical radionavigation service intended for the benefit of aircraft.

**AL**--Aeronautical Radionavigation Land Station: A land station in the aeronautical radionavigation service not intended for use while in motion.

**AM**--Aeronautical Radionavigation Mobile Station: A mobile station in the aeronautical radionavigation service intended to be used while in motion or during halts at unspecified points.

**TZ**--Aeronautical Radionavigation-Satellite Earth Station: A fixed earth station in the aeronautical radionavigation-satellite service.

**TO**--Aeronautical Radionavigation-Satellite Mobile Earth Station: A mobile earth station in the aeronautical radionavigation-satellite service. (RR)

**EO**--Aeronautical Radionavigation-Satellite Space Station: A space station in the aeronautical radionavigation-satellite service. (RR)

**FA**--Aeronautical Station: A land station in the aeronautical mobile service. In certain instances, an aeronautical station may be located, for example, on board ship or on a platform at sea. (RR)

**FG**--Aeronautical Station (OR): An aeronautical station in the aeronautical mobile (OR) service. (RR)

**FD**--Aeronautical Station (R): An aeronautical station in the aeronautical mobile (R) service. (RR)

**FLEA**--Aeronautical Telemetry Land Station: A telemetry land station used in the flight testing of manned or unmanned aircraft, missiles, or major components thereof.

**MOEA**--Aeronautical Telemetry Mobile Station: A telemetry mobile station used for transmitting data directly related to the airborne testing of the vehicle. (or major components), on which the station is installed.

**FLU**--Aeronautical Utility Land Station: A land station located at airdrome control towers and used for control of ground vehicles and aircraft on the ground at airdromes.

**MOU**--Aeronautical Utility Mobile Station: A mobile station used for communication at airdromes with the aeronautical utility land station, the airdrome control station, the FAA flight service station, ground vehicles, and aircraft on the ground. (All transmissions shall be subject to the control of the airdrome control station and shall be discontinued immediately when so requested by the airdrome control operators.)

**TJ**--Aircraft Earth Station: A mobile earth station in the aeronautical mobile-satellite service located on board an aircraft. (RR)

**MA**--Aircraft Station: A mobile station in the aeronautical mobile service, other than a survival craft station, located on board an aircraft. (RR)

**FAC**--Airdrome Control Station: An aeronautical station providing communication between an airdrome control tower and aircraft.

**AMA**--Altimeter Station: A radionavigation mobile station in the aeronautical radionavigation service which employs a radio altimeter.

**TY**--Base Earth Station: An earth station in the fixed-satellite service or in some cases in the land mobile-satellite service located at a specified fixed point or within a specified area on land to provide a feeder link for the land mobile-satellite service. (RR)

**FB**--Base Station: A land station in the land mobile service. (RR)

**EB**--Broadcasting-Satellite Space Station (sound broadcasting): A space station in the broadcasting-satellite service (sound broadcasting). (RR)

**EV**--Broadcasting-Satellite Space Station (television): A space station in the broadcasting-satellite service (television). (RR)

**BC**--Broadcasting Station (sound): A station (sound) in the broadcasting service. (RR)

**BT**--Broadcasting Station (television): A station (television) in the broadcasting service. (RR)

**TI**--Coast Earth Station: An earth station in the fixed-satellite service or in some cases in the maritime mobile-satellite service located at a specified fixed point on land to provide a feeder link for the maritime mobile-satellite service. (RR)

**FC**--Coast Station: A land station in the maritime mobile service. (RR)

**DGP**--Differential-Global-Positioning-System (DGPS) Station: a terrestrial station used for the transmission of differential correction information to DGPS receivers aboard aircraft for navigation.

**TW**--Earth Exploration-Satellite Earth Station: An earth station in the Earth exploration-satellite service. (RR)

**EW**--Earth Exploration-Satellite Space Station: A space station in the Earth exploration-satellite service. (RR)

**TP**--Earth Station (receiving): An earth station used for receiving. (RR) (TP is not used on applications.)

**XM**--Experimental Composite Station: An experimental station used in experimental operations of a complex nature not readily specified or used in operation which is a composite of two or more of the established experimental categories.

**XC**--Experimental Contract Developmental Station: An experimental station used for the evaluation or testing under Government contract of electronics equipment or systems in a design or development stage.

**XD**--Experimental Developmental Station: An experimental station used for evaluation or testing of electronics equipment or systems in a design or development stage.

**XE**--Experimental Export Station: An experimental station intended for export and used for the evaluation or testing of electronics equipment or systems in the design or development stage.

**XR**--Experimental Research Station: An experimental station used in basic studies concerning scientific investigations looking toward the improvement of the art of radiocommunications.

**EX**--Experimental Station: A station utilizing radio waves in experiments with a view to the development of science or technique. This definition does not include amateur stations. (RR) (EX is not used on applications.)

**XT**--Experimental Testing Station: An experimental station used for the evaluation or testing of electronics equipment or systems, including site selection and transmission path surveys, which have been developed for operational use.

**TC**--Fixed-Satellite Earth Station: An earth station in the fixed-satellite service. (RR)

**EC**--Fixed-Satellite Space Station: A space station in the fixed-satellite service. (RR)

**FX**--Fixed Station: A station in the fixed service. (RR)

**FLEB**--Flight Telemetry Land Station: A telemetry land station the emissions of which are used for telemetry to a balloon; to a booster or rocket, excluding a booster or rocket in orbit about the Earth or in deep space; or to an aircraft, excluding a station used in the flight testing of an aircraft.

**MOEB**--Flight Telemetry Mobile Station: A telemetry mobile station used for transmitting data from an airborne vehicle, excluding data related to airborne testing of the vehicle itself, (or major components thereof).

**FAT**--Flight Test Station: An aeronautical station used for the transmission of essential communications in connection with the testing of aircraft or major components of aircraft.

**ALG**--Glide Path (Slope) Station: A radionavigation land station which provides vertical guidance to aircraft during approach to landing.

**FXH**--Hydrologic and Meteorological Fixed Station: A fixed station the emissions of which are used for the automatic transmission of either hydrologic or meteorological data, or both.

**FLH**--Hydrologic and Meteorological Land Station: A land station the emissions of which are used for the automatic transmission of either hydrologic or meteorological data, or both.

**MOH**--Hydrologic and Meteorological Mobile Station: A mobile station the emissions of which are used for the automatic transmission of either hydrologic or meteorological data, or both.

**ES**--Inter-Satellite Space Station: A space station in the inter-satellite service. (RR) **VA**--Land Earth Station: An earth station in the fixed-satellite service or in some cases in the mobile-satellite service located at a specified point or within a specified area on land to provide a feeder link for the mobile-satellite service. (RR)

**TU**--Land Mobile Earth Station: A mobile earth station in the land mobile-satellite service capable of surface movement within the geographical limits of a country or continent. (RR)

**EU**--Land Mobile-Satellite Space Station: A space station in the land mobile-satellite service. (RR)

**ML**--Land Mobile Station: A mobile station in the land mobile service capable of surface movement within the geographical limits of a country or continent. (RR)

**FL**--Land Station: A station in the mobile service not intended to be used while in motion. (RR)

**ALL**--Localizer Station: A radionavigation land station in the aeronautical radionavigation service which employs an Instrument Landing System Localizer.

**RNL**--Loran Station: A long distance radionavigation land station transmitting synchronized pulses. Hyperbolic lines of position are determined by the measurement of the difference in the time of arrival of these pulses.

**FCB**--Marine Broadcast Station: A coast station which makes scheduled broadcasts of time, meteorological, and hydrographic information.

**NLC**--Maritime Radar Beacon (racon) Station: A land station in the maritime radionavigation service which employs a radar beacon (racon).

**NLM**--Maritime Radiobeacon Station: A radiobeacon station in the maritime radionavigation service intended for the benefit of ships.

**EG**--Maritime Mobile-Satellite Space Station: A space station in the maritime mobile-satellite service. (RR)

**NL**--Maritime Radionavigation Land Station: A land station in the Maritime radionavigation service not intended for use while in motion.

**TX**--Maritime Radionavigation-Satellite Earth Station: A fixed earth station in the maritime radionavigation-satellite service. (RR)

**TQ**--Maritime Radionavigation-Satellite Mobile Earth Station: A mobile earth station in the maritime radionavigation-satellite service. (RR)

**EQ**--Maritime Radionavigation-Satellite Space Station: A space station in the maritime radionavigation-satellite service. (RR)

**SM**--Meteorological Aids Base Station: A land station in the meteorological aids service not intended for use while in motion.

**SA**--Meteorological Aids Mobile Station: A mobile station in the meteorological aids service intended to be used while in motion or during halts at unspecified points.

**SMD**--Meteorological Radar Station: A station in the meteorological aids service employing radar.

**TM**--Meteorological-Satellite Earth Station: An earth station in the meteorological-satellite service. (RR)

**EM**--Meteorological-Satellite Space Station: A space station in the meteorological-satellite service. (RR)

**UA**--Mobile Earth Station: An earth station in the mobile-satellite service intended to be used while in motion or during halts at unspecified points. (RR)

**EI**--Mobile-Satellite Space Station: A space station in the mobile-satellite service. (RR)

**MO**--Mobile Station: A station in the mobile service intended to be used while in motion or during halts at unspecified points. (RR)

**OE**--Oceanographic Data Interrogating Station: A station in the maritime mobile service the emissions of which are used to initiate, modify or terminate functions of equipment directly associated with an oceanographic data station, including the station itself.

**OD**--Oceanographic Data Station: A station in the maritime mobile service located on a ship, buoy, or other sensor platform the emissions of which are used for transmission of oceanographic data.

**ALO**--Omnidirectional Range Station: A radionavigation land station in the aeronautical radionavigation service providing direct indication of the bearing (omnibearing) of that station from an aircraft.

**MAP**--Portable Aircraft Station: A portable station operating in the aeronautical mobile service.

**MLP**--Portable Land Mobile Station: A portable station operating in the land mobile service.

**MOP**--Portable Mobile Station: A portable station operating in the mobile service.

**MRP**--Portable Radiolocation Station: A portable station operating in the radiolocation service.

**MSP**--Portable Ship Station: A portable station operating in the maritime mobile service.

**FP**--Port Station: A coast station in the port operations service.(RR)

**SMB**--Radar Beacon Precipitation Gage Station: A transponder station in the meteorological aids service, the emissions of which are used for telemetering.

**RA**--Radio Astronomy Station: A station in the radio astronomy service. (RR) (This is always a receiving station.)

**MOB**--Radio Beacon Mobile Station: A mobile station the emissions of which are used to determine its location.

**TF**--Radiodetermination-Satellite Earth Station: A fixed earth station in the radiodetermination-satellite service. (RR)

**TL**--Radiodetermination-Satellite Mobile Earth Station: A mobile earth station in the radiodetermination-satellite service. (RR)

**EF**--Radiodetermination-Satellite Space Station: A space station in the radiodetermination-satellite service. (RR)

**RG**--Radio Direction-Finding Station: A radiodetermination station using radio direction-finding. (RR)

**LR**--Radiolocation Land Station: A station in the radiolocation service not intended to be used while in motion. (RR)

**MR**--Radiolocation Mobile Station: A station in the radiolocation service intended to be used while in motion or during halts at unspecified points. (RR)

**RN**--Radionavigation Land Station: A station in the radionavigation service not intended to be used in motion. (RR)

**ALTM**--Radionavigation Land Test Station (Maintenance Test Facility): A radionavigation land station in the aeronautical radionavigation service which is used as a radionavigation calibration station for the transmission of essential information in connection with the testing and calibration of aircraft navigational aids, receiving equipment and interrogators at predetermined surface locations. The primary purpose of this facility is to permit maintenance testing by aircraft radio service personnel.

**ALTO**--Radionavigation Land Test Station (Operational Test Facility): A radionavigation land station in the aeronautical radionavigation service which is used as a radionavigation calibration station for the transmission of essential information in connection with the testing and calibration of aircraft navigational aids, receiving equipment and interrogators at predetermined surface locations. The primary purpose of this facility is to permit the pilot to check a radionavigation system aboard the aircraft prior to takeoff.

**NR**--Radionavigation Mobile Station: A station in the radionavigation service intended to be used while in motion or during halts at unspecified points. (RR)

**TN**--Radionavigation-Satellite Fixed Earth Station: A fixed earth station in the radionavigation-satellite service. (RR)

**UM**--Radionavigation-Satellite Mobile Earth Station: A mobile earth station in the radionavigationsatellite service. (RR)

**EN**--Radionavigation-Satellite Space Station: A space station in the radionavigation-satellite service. (RR)

**ALR**--Radio Range Station: A radionavigation land station in the aeronautical radionavigation service providing radial equisignal zones. (In certain instances a radio range station may be placed on board a ship.)

**SAR**--Radiosonde Station: A station in the meteorological aids service employing a radiosonde.

**SMRG**--Radiosonde Ground Station: A station in the meteorological aids service employing a ground station associated with a radiosonde.

**TE**--Satellite EPIRB Station: A satellite Emergency Position-Indicating Radio Beacon (EPIRB) in the mobile-satellite service. (RR)

**TG**--Ship Earth Station: A mobile earth station in the maritime mobile-satellite service located on board ship. (RR)

**MS**--Ship Station: A mobile station in the maritime mobile service located on board a vessel which is not permanently moored, other than a survival craft station. (RR)

**SN**--Sounder Network Station: A station equipped with an ionosphere sounder used for the real-time selection of frequencies for operational communication circuits.

**SP**--Sounder Prediction Station: A station equipped with an ionosphere sounder for real-time monitoring of upper atmosphere phenomena or to obtain data for the prediction of propagation conditions.

**TT**--Space Operation Earth Station: An earth station in the space operation service. (RR)

**ET**--Space Operation Space Station: A space station in the space operation service. (RR)

**TH**--Space Research Earth Station: An earth station in the space research service. (RR)

**EH**--Space Research Space Station: A space station in the space research service.

**ME**--Space Station: A station located on an object which is beyond, is intended to go beyond, or has been beyond, the major portion of the Earth's atmosphere. (RR) (ME is not used on applications.)

**TD**--Space Telecommand Earth Station: An earth station the emissions of which are used for space telecommand.

**ED**--Space Telecommand Space Station: A space station which receives emissions used for space telecommand.

**TR**--Space Telemetry Earth Station: An earth station which receives emissions used for space telemetry.

**ER**--Space Telemetry Space Station: A space station the emissions of which are used for space telemetry.

**TK**--Space Tracking Earth Station: An earth station which transmits or receives emissions used for space tracking.

**EK**--Space Tracking Space Station: A space station which transmits or receives and retransmits emissions used for space tracking.

**SS**--Standard Frequency and Time Signal Station: A station in the standard frequency and time signal service. (RR)

**EE**--Standard Frequency Satellite Space Station: A space station in the standard frequency satellite service. (RR)

**FLEC**--Surface Telemetry Land Station: A telemetry land station the emissions of which are intended to be received on the surface of the Earth.

**MOEC**--Surface Telemetry Mobile Station: A telemetry mobile station located on the surface of the Earth and the emissions of which are intended to be received on the surface of the Earth.

**ALS**--Surveillance Radar Station: A radionavigation land station in the aeronautical radionavigation service employing radar to display the presence of aircraft within its range. (In certain instances, a surveillance radar station may be placed on board a ship.)

**FAD**--Telecommand Aeronautical Station: A land station in the aeronautical mobile service the emissions of which are used for terrestrial telecommand.

**MAD**--Telecommand Aircraft Station: A mobile station in the aeronautical mobile service the emissions of which are used for terrestrial telecommand.

**FBD**--Telecommand Base Station: A land station in the land mobile service the emissions of which are used for terrestrial telecommand.

**FCD**--Telecommand Coast Station: A land station in the maritime mobile service the emissions of which are used for terrestrial telecommand.

**FXD**--Telecommand Fixed Station: A fixed station in the fixed service the emissions of which are used for terrestrial telecommand.

**FLD**--Telecommand Land Station: A land station in the mobile service the emissions of which are used for terrestrial telecommand.

**MLD**--Telecommand Land Mobile Station: A mobile station in the land mobile service the emissions of which are used for terrestrial telecommand.

**MOD**--Telecommand Mobile Station: A mobile station in the mobile service the emissions of which are used for terrestrial telecommand.

**MSD**--Telecommand Ship Station: A mobile station in the maritime mobile service the emissions of which are used for terrestrial telecommand.

**FXE**--Telemetry Fixed Station: A fixed station the emissions of which are used for telemetry.

**FLE**--Telemetry Land Station: A land station the emissions of which are used for telemetry.

**MOE**--Telemetry Mobile Station: A mobile station the emissions of which are used for telemetry.

### **Stations - Alphabetical by Station Class Symbol**

**AL**--Aeronautical Radionavigation Land Station: A land station in the aeronautical radionavigation service not intended for use while in motion.

**ALA**--Aeronautical Marker Beacon Station: A radionavigation land station in the aeronautical radionavigation service which employs a marker beacon.

**ALB**--Aeronautical Radiobeacon Station: A radiobeacon station in the aeronautical radionavigation service intended for the benefit of aircraft.

**ALC**--Aeronautical Radar Beacon (racon) Station: A land station in the aeronautical radionavigation service which employs a radar beacon (racon).

**ALG**--Glide Path (Slope) Station: A radionavigation land station which provides vertical guidance to aircraft during approach to landing.

**ALL**--Localizer Station: A radionavigation land station in the aeronautical radionavigation service which employs an Instrument Landing System Localizer.

**ALO**--Omnidirectional Range Station: A radionavigation land station in the aeronautical radionavigation service providing direct indication of the bearing (omnibearing) of that station from an aircraft.

**ALR**--Radio Range Station: A radionavigation land station in the aeronautical radionavigation service providing radial equisignal zones. (In certain instances a radio range station may be placed on board a ship.)

**ALS**--Surveillance Radar Station: A radionavigation land station in the aeronautical radionavigation service employing radar to display the presence of aircraft within its range. (In certain instances, a surveillance radar station may be placed on board a ship.)

**ALTM**--Radionavigation Land Test Station (Maintenance Test Facility): A radionavigation land station in the aeronautical radionavigation service which is used as a radionavigation calibration station for the transmission of essential information in connection with the testing and calibration of aircraft navigational aids, receiving equipment and interrogators at predetermined surface locations. The primary purpose of this facility is to permit maintenance testing by aircraft radio service personnel.

**ALTO**--Radionavigation Land Test Station (Operational Test Facility): A radionavigation land station in the aeronautical radionavigation service which is used as a radionavigation calibration station for the transmission of essential information in connection with the testing and calibration of aircraft navigational aids, receiving equipment and interrogators at predetermined surface locations. The primary purpose of this facility is to permit the pilot to check a radionavigation system aboard the aircraft prior to takeoff.

**AM**--Aeronautical Radionavigation Mobile Station: A mobile station in the aeronautical radionavigation service intended to be used while in motion or during halts at unspecified points.

**AMA**--Altimeter Station: A radionavigation mobile station in the aeronautical radionavigation service which employs a radio altimeter.

**AX**--Aeronautical Fixed Station: A station in the aeronautical fixed service. (RR)

**BC**--Broadcasting Station (sound): A station (sound) in the broadcasting service. (RR)

**BT**--Broadcasting Station (television): A station (television) in the broadcasting service. (RR)

**EB**--Broadcasting-Satellite Space Station (sound broadcasting): A space station in the broadcastingsatellite service (sound broadcasting). (RR)

**DGP**--Differential-Global-Positioning-System (DGPS) Station: a terrestrial station used for the transmission of differential correction information to DGPS receivers aboard aircraft for navigation.

**EC**--Fixed-Satellite Space Station: A space station in the fixed-satellite service. (RR)

**ED**--Space Telecommand Space Station: A space station which receives emissions used for space telecommand. (RR)

**EE**--Standard Frequency Satellite Space Station: A space station in the standard frequency satellite service. (RR)

**EF**--Radiodetermination-Satellite Space Station: A space station in the radiodetermination-satellite service. (RR)

**EG**--Maritime Mobile-Satellite Space Station: A space station in the maritime mobile-satellite service. (RR)

**EH**--Space Research Space Station: A space station in the space research service. (RR)

**EI**--Mobile-Satellite Space Station: A space station in the mobile-satellite service. (RR)

**EJ**--Aeronautical Mobile-Satellite Space Station: A space station in the aeronautical mobile-satellite service. (RR)

**EK**--Space Tracking Space Station: A space station which transmits or receives and retransmits emissions used for space tracking.

**EM**--Meteorological-Satellite Space Station: A space station in the meteorological-satellite service. (RR)

**EN**--Radionavigation-Satellite Space Station: A space station in the radionavigation-satellite service. (RR)

**EO**--Aeronautical Radionavigation-Satellite Space Station: A space station in the aeronautical radionavigation-satellite service. (RR)

**EQ**--Maritime Radionavigation-Satellite Space Station: A space station in the maritime radionavigation-satellite service. (RR)

**ER**--Space Telemetry Space Station: A space station the emissions of which are used for space telemetry.

**ES**--Inter-Satellite Space Station: A space station in the inter-satellite service. (RR)

**ET**--Space Operation Space Station: A space station in the space operation service. (RR)

**EU**--Land Mobile-Satellite Space Station: A space station in the land mobile-satellite service. (RR)

**EV--Broadcasting-Satellite Space Station (television):** A space station in the broadcasting-satellite service (television). (RR)

**EW--Earth Exploration-Satellite Space Station:** A space station in the Earth exploration-satellite service. (RR)

**EX--Experimental Station:** A station utilizing radio waves in experiments with a view to development of science or technique. (RR) (EX is not used on applications.)

**FA--Aeronautical Station:** A land station in the aeronautical mobile service. In certain instances, an aeronautical station may be located, for example on board ship or on a platform at sea. (RR)

**FAB--Aeronautical Broadcast Station:** An aeronautical station which makes scheduled broadcasts of meteorological information and notices to airmen. (In certain instances, an aeronautical broadcast station may be placed on board a ship.)

**FAC--Airdrome Control Station:** An aeronautical station providing communication between an airdrome control tower and aircraft.

**FAD--Telecommand Aeronautical Station:** A land station in the aeronautical mobile service the emissions of which are used for terrestrial telecommand.

**FAT--Flight Test Station:** An aeronautical station used for the transmission of essential communications in connection with the testing of aircraft or major components of aircraft.

**FB--Base Station:** A land station in the land mobile service. (RR)

**FBD--Telecommand Base Station:** A land station in the land mobile service the emissions of which are used for terrestrial telecommand.

**FC--Coast Station:** A land station in the maritime mobile service. (RR)

**FCB--Marine Broadcast Station:** A coast station which makes scheduled broadcast of time, meteorological, and hydrographic information.

**FCD--Telecommand Coast Station:** A land station in the maritime mobile service the emissions of which are used for terrestrial telecommand.

**FD--Aeronautical Station (R):** An aeronautical station in the aeronautical mobile (R) service. (RR)

**FG--Aeronautical Station (OR):** An aeronautical station in the aeronautical mobile (OR) service. (RR)

**FL--Land Station:** A station in the mobile service not intended to be used while in motion. (RR)

**FLD--Telecommand Land Station:** A land station in the mobile service the emissions of which are used for terrestrial telecommand.

**FLE--Telemetry Land Station:** A land station the emissions of which are used for telemetry.

**FLEA--Aeronautical Telemetry Land Station:** A telemetry land station used in the flight testing of manned or unmanned aircraft, missiles, or major components thereof.

**FLEB--Flight Telemetry Land Station:** A telemetry land station the emissions of which are used for telemetry to a balloon; to a booster or rocket, excluding a booster or rocket in orbit about the Earth or in deep space; or to an aircraft, excluding a station used in the flight testing of an aircraft.

**FLEC--Surface Telemetry Land Station:** A telemetry land station the emissions of which are intended to be received on the surface of the Earth.

**FLH--Hydrologic and Meteorological Land Station:** A land station the emissions of which are used for the automatic transmission of either hydrologic or meteorological data, or both.

**FLU--Aeronautical Utility Land Station:** A land station located at airdrome control towers and used for control of ground vehicles and aircraft on the ground at airdromes.

**FP--Port Station:** A coast station in the port operations service. (RR)

**FX--Fixed Station:** A station in the fixed service. (RR)

**FXD--Telecommand Fixed Station:** A fixed station in the fixed service the emissions of which are used for terrestrial telecommand.

**FXE--Telemetry Fixed Station:** A fixed station the emissions of which are used for telemetry.

**FXH--Hydrologic and Meteorological Fixed Station:** A fixed station the emissions of which are used for the automatic transmission of either hydrologic or meteorological data, or both.

**LR--Radiolocation Land Station:** A station in the radiolocation service not intended to be used while in motion. (RR)

**MA--Aircraft Station:** A mobile station in the aeronautical mobile service other than a survival craft station, located on board an aircraft. (RR)

**MAD--Telecommand Aircraft Station:** A mobile station in the aeronautical mobile service the emissions of which are used for terrestrial telecommand.

**MAP--Portable Aircraft Station:** A portable station operating in the aeronautical mobile service.

**ME--Space Station:** A station located on an object which is beyond, is intended to go beyond, or has been beyond, the major portion of the Earth's atmosphere. (RR) (ME is not used on applications.)



**ML--Land Mobile Station:** A mobile station in the land mobile service capable of surface movement within the geographical limits of a country or continent. (RR)

**MLD--Telecommand Land Mobile Station:** A mobile station in the land mobile service the emissions of which are used for terrestrial telecommand.

**MLP--Portable Land Mobile Station:** A portable station operating in the land mobile service.

**MO--Mobile Station:** A station in the mobile service intended to be used while in motion or during halts at unspecified points. (RR)

**MOB--Radio Beacon Mobile Station:** A mobile station the emissions of which are used to determine its location.

**MOD--Telecommand Mobile Station:** A mobile station in the mobile service the emissions of which are used for terrestrial telecommand.

**MOE--Telemetry Mobile Station:** A mobile station the emissions of which are used for telemetry.

**MOEA--Aeronautical Telemetry Mobile Station:** A telemetry mobile station used for transmitting data directly related to the airborne testing of the vehicle, (or major components), on which the station is installed.

**MOEB--Flight Telemetry Mobile Station:** A telemetry mobile station used for transmitting data from an airborne vehicle, excluding data related to airborne testing of the vehicle itself, (or major components thereof).

**MOEC--Surface Telemetry Mobile Station:** A telemetry mobile station located on the surface of the Earth and the emissions of which are intended to be received on the surface of the Earth.

**MOH--Hydrologic and Meteorological Mobile Station:** A mobile station the emissions of which are used for the automatic transmission of either hydrologic or meteorological data, or both.

**MOP--Portable Mobile Station:** A portable station operating in the mobile service.

**MOU--Aeronautical Utility Mobile Station:** A mobile station used for communication at airdromes with the aeronautical utility land station, the airdrome control station, the FAA flight service station, ground vehicles, and aircraft on the ground. (All transmissions shall be subject to the control of the airdrome control station and shall be discontinued immediately when so requested by the airdrome control operators.)

**MR--Radiolocation Mobile Station:** A station in the radiolocation service intended to be used while in motion or during halts at unspecified points. (RR)

**MRP--Portable Radiolocation Station:** A portable station operating in the radiolocation service.

**MS--Ship Station:** A mobile station in the maritime mobile service located on board a vessel which is not permanently moored, other than a survival craft station. (RR)

**MSD--Telecommand Ship Station:** A mobile station in the maritime mobile service the emissions of which are used for terrestrial telecommand.

**MSP--Portable Ship Station:** A portable station operating in the maritime mobile service.

**NL--Maritime Radionavigation Land Station:** A land station in the Maritime Radionavigation Service not intended for use while in motion.

**NLC--Maritime Radar Beacon (racon) Station:** A land station in the maritime radionavigation service which employs a radar beacon (racon).

**NLM--Marine Radiobeacon Station:** A radiobeacon station in the maritime radionavigation service intended for the benefit of ships.

**NR--Radionavigation Mobile Station:** A station in the radionavigation service intended to be used while in motion or during halts at unspecified points. (RR)

**OD--Oceanographic Data Station:** A station in the maritime mobile service located on a ship, buoy or other sensor platform the emissions of which are used for the transmission of oceanographic data.

**OE--Oceanographic Data Interrogating Station:** A station in the maritime mobile service the emissions of which are used to initiate, modify, or terminate functions of equipment directly associated with an oceanographic data station, including the station itself.

**RA--Radio Astronomy Station:** A station in the radio astronomy service. (RR) (This is always a receiving station.)

**RG--Radio Direction-Finding Station:** A radiodetermination station using radio direction-finding. (RR)

**RN--Radionavigation Land Station:** A station in the radionavigation service not intended to be used in motion. (RR)

**RNL--Loran Station:** A long distance radionavigation land station transmitting synchronized pulses. Hyperbolic lines of position are determined by the measurement of the difference in the time of arrival of these pulses.

**SA--Meteorological Aids Mobile Station:** A mobile station in the meteorological aids service intended to be used while in motion or during halts at unspecified points.

**SAR--Radiosonde Station:** A station in the meteorological aids service employing a radiosonde.

**SM--Meteorological Aids Base Station:** A land station in the meteorological aids service not intended for use while in motion.

**SMB**--Radar Beacon Precipitation Gage Station: A transponder station in the meteorological aids service, the emissions of which are used for telemetering.

**SMD**--Meteorological Radar Station: A station in the meteorological aids service employing radar.

**SMRG**--Radiosonde Ground Station: A station in the meteorological aids service employing a ground station associated with a radiosonde.

**SN**--Sounder Network Station: A station equipped with an ionosphere sounder used for the real-time selection of frequencies for operational communication circuits.

**SP**--Sounder Prediction Station: A station equipped with an ionosphere sounder for real-time monitoring of upper atmosphere phenomena or to obtain data for the prediction of propagation conditions.

**SS**--Standard Frequency and Time Signal Station: A station in the standard frequency and time signal service. (RR)

**TB**--Aeronautical Earth Station: An earth station in the fixed-satellite service or in some cases in the aeronautical mobile-satellite service located at a specified fixed point on land to provide a feeder link for the aeronautical mobile-satellite service. (RR)

**TC**--Fixed-Satellite Earth Station: An earth station in the fixed-satellite service. (RR)

**TD**--Space Telecommand Earth Station: An earth station the emissions of which are used for space telecommand.

**TE**--Satellite EPIRB Station: A satellite Emergency Position-Indicating Radio Beacon (EPIRB) in the mobile-satellite service (RR).

**TF**--Radiodetermination-Satellite Earth Station: A fixed earth station in the radiodetermination-satellite service. (RR)

**TG**--Ship Earth Station: A mobile earth station in the maritime mobile-satellite service located on board ship. (RR)

**TH**--Space Research Earth Station: An earth station in the space research service. (RR)

**TI**--Coast Earth Station: An earth station in the fixed-satellite service or in some cases in the maritime mobile-satellite service located at a specified fixed point on land to provide a feeder link for the maritime mobile-satellite. (RR)

**TJ**--Aircraft Earth Station: A mobile earth station in the aeronautical mobile-satellite service located on board an aircraft. (RR)

**TK**--Space Tracking Earth Station: An earth station which transmits or receives emissions used for space tracking.

**TL**--Radiodetermination-Satellite Mobile Earth Station: A mobile earth station in the radiodetermination-satellite service. (RR)

**TM**--Meteorological-Satellite Earth Station: An earth station in the meteorological-satellite service. (RR)

**TN**--Radionavigation-Satellite Fixed Earth Station: A fixed earth station in the radionavigation-satellite service. (RR)

**TO**--Aeronautical Radionavigation-Satellite Mobile Earth Station: A mobile earth station in the aeronautical radionavigation-satellite service. (RR)

**TP**--Earth Station (receiving): An earth station used for receiving. (RR) (TP is not used on applications.)

**TQ**--Maritime Radionavigation-Satellite Mobile Earth Station: A mobile earth station in the maritime radionavigation-satellite service. (RR)

**TR**--Space Telemetering Earth Station: An earth station which receives emissions used for space telemetering.

**TT**--Space Operation Earth Station: An earth station in the space operation service. (RR)

**TU**--Land Mobile Earth Station: A mobile earth station in the land mobile-satellite service capable of surface movement within the geographical limits of a country or continent. (RR)

**TW**--Earth Exploration-Satellite Earth Station: An earth station in the Earth exploration-satellite service. (RR)

**TX**--Maritime Radionavigation-Satellite Earth Station: A fixed earth station in the maritime radionavigation-satellite service. (RR)

**TY**--Base Earth Station: An earth station in the fixed-satellite service or in some cases in the land mobile-satellite service located at a specified point or within a specified area on land to provide a feeder link for the land mobile-satellite service. (RR)

**TZ**--Aeronautical Radionavigation-Satellite Earth Station: A fixed earth station in the aeronautical radionavigation-satellite service. (RR)

**UA**--Mobile Earth Station: An earth station in the mobile-satellite service intended to be used while in motion or during halts at unspecified points. (RR)

**UM**--Radionavigation-Satellite Mobile Earth Station: A mobile earth station in the radionavigation-satellite service. (RR)

**VA**--Land Earth Station: An earth station in the fixed-satellite service or in some cases in the mobile-satellite service located at a specified point or within a specified area on land to provide a feeder link for the mobile-satellite service. (RR)

**XC**--Experimental Contract Developmental Station: An experimental station used for the evaluation or testing under Government contract of electronics equipment or systems in a design or development stage.

**XD**--Experimental Developmental Station: An experimental station used for evaluation or testing of electronics equipment or systems in a design or development stage.

**XE**--Experimental Export Station: An experimental station intended for export and used for the evaluation or testing of electronics equipment or systems in the design or development stage.

**XM**--Experimental Composite Station: An experimental station used in experimental operations of a complex nature not readily specified or used in an operation which is a composite of two or more of the established experimental categories.

**XR**--Experimental Research Station: An experimental station used in basic studies concerning scientific investigation looking toward the improvement of the art of radiocommunications.

**XT**--Experimental Testing Station: An experimental station used for the evaluation or testing of electronics equipment or systems, including site selection and transmission path surveys, which have been developed for operational use.

## Table of Services, Station Classes, and Stations

Table A is used to determine the proper Station Class (STC) symbol to be used versus the *Service* in which the transmitting station will operate. Frequency bands are allocated to Service(s) based upon the U.S. Government Table of Frequency Allocations.

**TABLE A**

Table of Services, Station Classes, and Stations

Service	Station Class	Station
<b>1. Amateur</b>	None	Amateur
<b>2. Broadcasting</b>	BC BT	Broadcasting (sound) Broadcasting (television)
<b>3. Broadcasting-Satellite</b>	EB EV	Space (sound) Space (television)
<b>4. Earth Exploration-Satellite</b>	EW TW	Space Earth
<i>Meteorological-Satellite</i>	EM TM	Space Earth
<b>5. Fixed</b>	FX FXD FXE FXH	Fixed Telecommand Fixed Telemetry Fixed Hydrologic and Meteorological Fixed
<i>Aeronautical Fixed</i>	AX	Aeronautical Fixed
<b>6. Fixed-Satellite</b>	EC TC VA TB TI TY	Space Earth Land Earth Earth Coast Earth Base Earth
<b>7. Inter-Satellite</b>	ES	Space
<b>8. Meteorological Aids</b>	SA SAR SM SMB SMD SMRG	Meteorological Aids Mobile Station Radiosonde Meteorological Aids Base Station Radar Beacon Precipitation Gage Meteorological Radar Radiosonde Ground
<b>9. Mobile</b>	FL FLD FLE FLEA FLEB FLEC FLH FLU	Land Telecommand Land Telemetry Land Aeronautical Telemetry Land Flight Telemetry Land Surface Telemetry Land Hydrologic and Meteorological Land Aeronautical Utility Land

Service	Station Class	Station
	MO MOB MOD MOE MOEA MOEB MOEC MOH MOP MOU	Mobile Radio Beacon Mobile Telecommand Mobile Telemetry Mobile Aeronautical Telemetry Mobile Flight Telemetry Mobile Surface Telemetry Mobile Hydrologic and Meteorological Mobile Portable Mobile Aeronautical Utility Mobile
<i>Aeronautical Mobile</i>	FA FAB FAC FAD FAT MA MAD MAP	Aeronautical Aeronautical Broadcast Airdrome Control Telecommand Aeronautical Flight Test Aircraft Telecommand Aircraft Portable Aircraft
<i>Aeronautical Mobile (OR)</i>	FG	Aeronautical
<i>Aeronautical Mobile (R)</i>	FD	Aeronautical
<i>Land Mobile</i>	FB FBD ML MLD MLP	Base Telecommand Base Land Mobile Telecommand Land Mobile Portable Land Mobile
<i>Maritime Mobile</i>	FC FCB FCD MS MSD MSP OD OE	Coast Marine Broadcast Telecommand Coast Ship Telecommand Ship Portable Ship Oceanographic Data Oceanographic Data Interrogating
<b>10. Mobile-Satellite</b>	UA TE EI VA	Mobile Earth Satellite EPIRB Space Land Earth
<i>Aeronautical Mobile-Satellite</i>	EJ TB TJ	Space Earth Aircraft Earth
<i>Land Mobile-Satellite</i>	EU TU TY	Space Land Mobile Earth Base Earth
<i>Maritime Mobile-Satellite</i>	EG TG	Space Ship Earth

Service	Station Class	Station
	TI	Coast Earth
<b>11. Radio Astronomy</b>	RA	Radio Astronomy
<b>12. Radiodetermination</b>	None RG	Radiodetermination Radio Direction-Finding
<b><i>Radiolocation</i></b>	LR MR MRP	Land Mobile Portable
<b><i>Radionavigation</i></b>	NR RNL RN	Mobile LORAN Land
Aeronautical Radionavigation	AL ALA ALB ALC ALG ALL ALO ALR ALS ALTM ALTO AM AMA	Land Marker Beacon Radio Beacon Radar Beacon (Racon) Glide Path (Slope) Localizer Omnidirectional Range Radio Range Surveillance Radar Land Test (Maintenance) Land Test (Operational) Mobile Altimeter
Maritime Radionavigation	NL NLC NLM	Land Radar Beacon (Racon) Marine Radio Beacon
<b>13. Radiodetermination-Satellite</b>	EF TF TL	Space Earth Mobile Earth
<b><i>Radionavigation-Satellite</i></b>	EN TN UM	Space Fixed Earth Mobile Earth
Aeronautical Radionavigation-Satellite	EO TO TZ	Space Mobile Earth Earth
Maritime Radionavigation-Satellite	EQ TQ TX	Space Mobile Earth Earth
<b>14. Space Operation</b>	ET TT	Space Earth
<b>15. Space Research</b>	EH TH	Space Earth
<b>16. Standard Frequency and Time Signal</b>	SS	Standard Frequency and Time Signal

Service	Station Class	Station
<b>17. Standard Frequency and Time Signal-Satellite</b>	EE	Space
<b>18. No Specific Service</b>	DGP ED EK ER SN SP TD TK TR XC XD XE XM XR XT	Differential-Global-Positioning-System Space Telecommand Space Space Tracking Space Space Telemetry Space Sonder Network Sonder Prediction Space Telecommand Earth Space Tracking Earth Space Telemetry Earth Experimental Contract Developmental Experimental Developmental Experimental Export Experimental Composite Experimental Research Experimental Testing

## ANNEX B - TABLE OF EMISSIONS DESIGNATORS

1. Table A-B-1 contains the emission classification symbols for use it Data Item 114.

Table A-B-1 - Required Emission Classification Symbols (Page 1 of 2)

First Symbol - Designates Type of Modulation of the Main Carrier	
<p><b>Angle-Modulated</b>  F - Frequency modulation  G - Phase modulation</p> <p><b>Amplitude and Angle-Modulated</b>  D - Main carrier is amplitude-modulated and angle-modulated simultaneously or in a preestablished sequence</p> <p><b>Pulse</b>  P - Sequence of unmodulated pulses  <i>A sequence of pulses</i>  K - Modulated in amplitude  L - Modulated in width or duration  M - Modulated in position phase  Q - Carrier is angle-modulated during the period of the pulse  V - Combination of the foregoing or is produced by other means</p> <p><b>Combination</b>  W - Cases not covered above in which an emission consists of the main carrier being modulated, either simultaneously or in a preestablished sequence, in a combination of two or more of the following modes: amplitude, angle, pulse</p> <p><b>Other</b>  X - Cases not otherwise covered<sup>1</sup></p> <p><b>Unmodulated</b>  N - Emission of unmodulated carrier</p> <p><b>Amplitude Modulated</b>  A - Double sideband  B - Independent sidebands  C - Vestigial sidebands  H - Single sideband, full carrier  J - Single sideband, suppressed carrier  R - Single sideband, reduced or variable level carrier</p>	
<p><sup>1</sup>A full explanation for the selection of the letter X shall be provided in the Supplementary Details (SUP) unless the application is for a non-directional beacon in the bands 190-435 and 510-535 kHz.</p>	



Table A-B-1 (Page 2 of 2)

<b>Second Symbol - Designates the Nature of Signal(s) Modulating the Main Carrier</b>	
0 -	No modulating signal
1 -	A single channel containing quantized or digital information, not using a modulating subcarrier. (Excludes time-division multiplex)
2 -	A single channel containing quantized or digital information, using a modulating subcarrier
3 -	A single channel containing analogue information
7 -	Two or more channels containing quantized or digital information
8 -	Two or more channels containing analogue information
9 -	Composite system with one or more channels containing quantized or digital information, together with one or more channels containing analogue information
X -	Cases not otherwise covered
<b>Third Symbol - Type of Information to be Transmitted<sup>a</sup></b>	
N	No information transmitted
A	Telegraphy - for aural reception
B	Telegraphy - for automatic reception
C	Facsimile
D	Data transmission, telemetry, telecommand
E	Telephony (including sound broadcasting)
F	Television (video)
W	Combination of the above
X	Cases not otherwise covered. <sup>b</sup>
<sup>a</sup> In this context, the word "information" does not include information of a constant, unvarying, nature such as that provided by standard frequency emissions, continuous wave, pulse radars, etc. <sup>b</sup> A full explanation for the selection of the letter X shall be provided in item 520 unless the application is for a non-directional beacon in the bands 190-435 and 510-535 kHz.	

Table A-B-2 - Optional Emission Classification Symbols

<b>Fourth Symbol - Designates the Details of Signal(s)</b>	
A -	Two-condition code with elements of differing numbers and/or durations
B -	Two-condition code with elements of the same number and duration without error correction
C -	Two-condition code with elements of the same number and duration with error correction
D -	Four-condition code in which each condition represents a signal element of one or more bits
E -	Multi-condition code in which each condition represents a signal element of one or more bits
F -	Multi-condition code in which each condition or combination of conditions represents a character
G -	Sound of broadcasting quality (monophonic)
H -	Sound of broadcasting quality (stereophonic or quadraphonic)
J -	Sound of commercial quality (excluding categories defined for symbol K and L below)
K -	Sound of commercial quality with the use of frequency inversion or band splitting
L -	Sound of commercial quality with separate frequency modulated signals to control the level of demodulated signal
M -	Monochrome
N -	Color
W -	Combination of the above
X -	Cases not otherwise covered
<b>Fifth Symbol - Designates the Nature of Multiplexing</b>	
N -	None
C -	Code-division multiplex (includes bandwidth expansion techniques)
F -	Frequency-division multiplex
T -	Time-division multiplex
W -	Combination of frequency-division multiplex and time-division multiplex
X -	Other types of multiplexing

## ANNEX C - GEOGRAPHICAL ABBREVIATIONS

This annex contains those abbreviations that will be used in Data Items 300, 301, 400 401, 530 and 531. The various lists are sorted by the approved code.

### UNITED STATES AND POSSESSIONS

#### 50 United States and the District of Columbia

AK	Alaska	MT	Montana
AL	Alabama	NC	North Carolina
AR	Arkansas	ND	North Dakota
AZ	Arizona	NE	Nebraska
CA	California	NH	New Hampshire
CO	Colorado	NJ	New Jersey
CT	Connecticut	NM	New Mexico
DC	District of Columbia	NV	Nevada
DE	Delaware	NY	New York
FL	Florida	OH	Ohio
GA	Georgia	OK	Oklahoma
HI	Hawaii	OR	Oregon
IA	Iowa	PA	Pennsylvania
ID	Idaho	RI	Rhode Island
IL	Illinois	SC	South Carolina
IN	Indiana	SD	South Dakota
KS	Kansas	TN	Tennessee
KY	Kentucky	TX	Texas
LA	Louisiana	UT	Utah
MA	Massachusetts	VA	Virginia
MD	Maryland	VT	Vermont
ME	Maine	WA	Washington
MI	Michigan	WI	Wisconsin
MN	Minnesota	WV	West Virginia
MO	Missouri	WY	Wyoming
MS	Mississippi		

#### Possession or Commonwealths of the United States (Other than the 50 United States and the District of Columbia)

##### *Caribbean Area*

-	Navassa Island
PR	Puerto Rico (including Culebra, Mona, and Vieques)
-	Quita Sueno Bank
-	Roncador Bank (Roncador Cay)
-	Serrana Bank (North Cay, Southwest Cay, Northwest Rocks, Dry Ledge)
-	Serranilla Bank (West Breaker, Beacon Cay)
VI	Virgin Islands (St. Croix, St. John, St. Thomas)

##### *Pacific Area*

-	Baker Island
GUM	Guam
HWL	Howland Island
JAR	Jarvis Island
JON	Johnston Island (including Sand Island)
-	Kingman Reef
MDW	Midway (Includes Eastern and Sand Islands)
MRA	(except Guam) Mariana Islands (Formerly Ladrone Islands) (Agrihan, Aguijan, Alamagan, Anatahan, Asuncion, Guguan, Maug, Medinilla, Pagan, Farallon de Pajaros, Rota, Saipan, Sarigan, and Tinian)
PLM	Palmyra Island (Some 50 islands make up the Atoll of Palmyra)
SMA	Samoa (American) (Aunuu, Manua Group [or Islands, i.e., Ofu, Olosega, Tau], Rose Island, Swains Island, Tutuila)
WAK	Wake Island

#### **AREA AND OTHER ABBREVIATIONS**

AFR	Africa
ANTR	Antarctica
ARCO	Arctic Ocean
CAM	Central America
CBN	Caribbean
EUR	Europe
FE	Far East (Countries of China, Japan, Korea, Thailand, Brunei, Burma, Cambodia, Indonesia, Laos, Malaysia, Philippines, Vietnam and East India)
GLM	Gulf of Mexico
GTLK	Great Lakes (collectively)
INDO	Indian Ocean
LAM	Latin America
LANT	Atlantic Ocean
LERI	Lake Erie
LHUR	Lake Huron
LMIC	Lake Michigan
LONT	Lake Ontario
LSUP	Lake Superior
MED	Mediterranean Sea
OCNA	Oceania
PAC	Pacific Ocean
RCVR	Restricted for use only in Passive Sensor and Radio Astronomy listings
SPCE	Space
US	For US only when transmitting and/or receiving in all 50 United States and the District of Columbia
USA	For use only when transmitting and/or receiving in the 48 Contiguous States of the United States and the District of Columbia (This Excludes Alaska and Hawaii)
USP	For use only when transmitting and/or receiving throughout the US (50 States and District of Columbia), the Commonwealth of Puerto Rico, and the Territories and Possessions (does not include the former Trust Territory of the Pacific Islands)

#### **COUNTRY ABBREVIATIONS**

ABW	Aruba
AFG	Afghanistan (Islamic State of)
AFS	South Africa (Republic of)
AGL	Angola (Republic of)
AIA	Anguilla
ALB	Albania (Republic of)

ALG	Algeria (People's Democratic Republic of)
ALS	Alaska (not for use in GMF; for ITU use only)
AMS	Saint Paul and Amsterdam Islands
AND	Andorra (Principality of)
AOE	Western Sahara
ARG	Argentine Republic
ARM	Armenia (Republic of)
ARS	Saudi Arabia (Kingdom of)
ASC	Ascension
ATA	Antartic
ATG	Antigua and Barbuda
ATN	Netherlands Antilles
AUS	Australia
AUT	Austria
AZE	Azerbaijani Republic
AZR	Azores

B	Brazil (Federative Republic of)
BAH	Bahamas (Commonwealth of the)
BDI	Burundi (Republic of)
BEL	Belgium
BEN	Benin (Republic of)
BER	Bermuda
BFA	Burkina Faso
BGD	Bangladesh (People's Republic of)
BHR	Bahrain (State of)
BIH	Bosnia & Herzegovina (Republic of)
BIO	British Indian Ocean Territory
BLR	Belarus (Republic of)
BLZ	Belize
BOL	Bolivia (Republic of)
BOT	Botswana (Republic of)
BRB	Barbados
BRM	Myanmar (Union of)
BRU	Brunei Darussalam
BTN	Bhutan (Kingdom of)
BUL	Bulgaria (Republic of)

CAF	Central African Republic
CAN	Canada
CAR	Caroline Islands
CBG	Cambodia (Kingdom of)
CHL	Chile (except Easter Island)
CHN	China (People's Republic of)
CHR	Christmas Island (Indian Ocean)
CKH	Cook Islands
CLM	Colombia (Republic of)
CLN	Sri Lanka (Democratic Socialist Republic of)
CME	Cameroon (Republic of)
CNR	Canary Islands
COG	Congo (Republic of the)
COM	Comoros (Islamic Federal Republic of the)
CPV	Cape Verde (Republic of)
CRO	Crozet Archipelago
CTI	Cote d'Ivoire (Republic of)

CTR	Costa Rica
CUB	Cuba
CVA	Vatican City State
CYM	Cayman Islands
CYP	Cyprus (Republic of)
CZE	Czech Republic
D	Germany (Federal Republic of)
DGA	Diego Garcia
DJI	Djibouti (Republic of)
DMA	Dominica (Commonwealth of)
DNK	Denmark
DOM	Dominican Republic
E	Spain
EGY	Egypt (Arab Republic of)
EQA	Ecuador
ERI	Eritrea
EST	Estonia (Republic of)
ETH	Ethiopia
F	France
FJI	Fiji (Republic of)
FLK	Falkland Islands (Malvinas)
FIN	Finland
FRO	Faroe Islands
FSM	Micronesia (Federated States of) (Kapingamarangi, Kosrae, Lamotrek, Namonuito, Nukuoro, Oroluk, Pohnpei, Truk, Ulithi, Woleai, Yap)
G	United Kingdom of Great Britain and Northern Ireland
GAB	Gabonese Republic
GCA	Territories of the United Kingdom in Region 1
GCC	Territories of the United Kingdom in Region 3
GDL	Guadeloupe (French Department of)
GEO	Georgia (Republic of)
GHA	Ghana
GIB	Gibraltar
GMB	Gambia (Republic of the)
GNB	Guinea-Bissau (Republic of)
GNE	Equatorial Guinea (Republic of)
GRC	Greece
GRD	Grenada
GRL	Greenland
GTM	Guatemala (Republic of)
GUF	Guiana (French Department of)
GUI	Guinea (Republic of)
GUM	Guam
GUY	Guyana
HKG	Hong Kong
HND	Honduras (Republic of)
HNG	Hungary (Republic of)
HOL	Netherlands (Kingdom of the)
HRV	Croatia (Republic of)
HTI	Haiti (Republic of)

HWA	Hawaii (not for use in GMF; for ITU use only)
I	Italy
ICO	Cocos Keeling Islands
IND	India (Republic of)
INS	Indonesia (Republic of)
IRL	Ireland
IRN	Iran (Islamic Republic of)
IRQ	Iraq (Republic of)
ISL	Iceland
ISR	Israel (State of)
J	Japan (includes Iwo Jima, Marcus Island, Ryu Kyu Islands)
JMC	Jamaica
JON	Johnston Island
JOR	Jordan (Hashemite Kingdom of)
KAZ	Kazakhstan (Republic of)
KEN	Kenya (Republic of)
KER	Kerguelen Islands
KGZ	Kyrgyz Republic
KIR	Kiribati (Republic of)
KOR	Korea (Republic of)
KRE	Democratic People's Republic of Korea
KWT	Kuwait (State of)
LAO	Lao People's Democratic Republic
LBN	Lebanon
LBR	Liberia (Republic of)
LBY	Libya (Socialist People's Libyan Arab Jamahiriya)
LCA	Saint Lucia
LIE	Liechtenstein (Principality of)
LSO	Lesotho (Kingdom of)
LTU	Lithuania (Republic of)
LUX	Luxembourg
LVA	Latvia (Republic of)
MAC	Macao
MAU	Mauritius (Republic of)
MCO	Monaco (Principality of)
MDA	Moldova (Republic of)
MDG	Madagascar (Democratic Republic of)
MDR	Madeira
MDW	Midway Islands
MEX	Mexico
MHL	Marshall Islands (Republic of the) (Ailinglapalap, Arno, Ebeye, Enewetak, Jaluit, Kwajalein, Majuro, Mili, Roi-Namur, Rongelap)
MKD	The Former Yugoslav Republic of Macedonia
MLA	Malaysia
MLD	Maldives (Republic of)
MLI	Mali (Republic of)
MLT	Malta
MNG	Mongolian People's Republic
MOZ	Mozambique (Republic of)
MRA	Mariana Islands (except Guam)

MRC	Morocco (Kingdom of)
MRN	Marion Island
MRT	Martinique (French Department of)
MSR	Montserrat
MTN	Mauritania (Islamic Republic of)
MWI	Malawi
MYT	Mayotte Island
NCG	Nicaragua
NCL	New Caledonia
NFK	Norfolk Island
NGR	Niger (Republic of the)
NIG	Nigeria (Federal Republic of)
NIU	Niue Island
NMB	Namibia (Republic of)
NOR	Norway
NPL	Nepal
NRU	Nauru (Republic of)
NZL	New Zealand
OCE	French Polynesia
OMA	Oman (Sultanate of)
PAK	Pakistan (Islamic Republic of)
PAQ	Easter Island (Chile)
PHL	Philippines (Republic of the)
PHX	Phoenix Islands
PLM	Palmyra Island (some 50 islands make up the Atoll of Palmyra)
PLW	Palau (Republic of)
PNG	Papua New Guinea
PNR	Panama (Republic of)
POL	Poland (Republic of)
POR	Portugal
PRG	Paraguay (Republic of)
PRU	Peru
PTC	Pitcairn Island
PTR	Puerto Rico (including Culebra, Mona, and Vieques) (not for use in GMF; for ITU use only)
QAT	Qatar (State of)
REU	Reunion (French Department of)
ROD	Rodriguez
ROU	Romania
RUS	Russian Federation
RRW	Rwandese Republic S Sweden
SCN	Saint Christopher and Nevis
SDN	Sudan (Republic of the)
SEN	Senegal (Republic of)
SEY	Seychelles (Republic of)
SHN	Saint Helena
SLM	Solomon Islands
SLV	El Salvador (Republic of)
SMA	American Samoa
SMO	Western Samoa (Independent State of)

SMR	San Marino (Republic of)
SNG	Singapore (Republic of)
SOM	Somali Democratic Republic
SPM	Saint Pierre and Miquelon (French Department of)
SRL	Sierra Leone STP Sao Tome and Principe (Democratic Republic of)
SUI	Switzerland (Confederation of)
SUR	Suriname (Republic of)
SVK	Slovak Republic
SVN	Slovenia (Republic of)
SWN	Swan Islands
SWZ	Swaziland (Kingdom of)
SYR	Syrian Arab Republic
TCA	Turks and Caicos Islands
TCD	Chad (Republic of)
TGO	Togolese Republic
THA	Thailand
TKL	Tokelau Islands
TJK	Tajikistan (Republic of)
TKM	Turkmenistan
TMP	East Timor
TON	Tonga (Kingdom of)
TRC	Tristan da Cunha
TRD	Trinidad and Tobago
TUN	Tunisia
TUR	Turkey
TUV	Tuvalu
TZA	Tanzania (United Republic of)
UAE	United Arab Emirates
UGA	Uganda (Republic of)
UKR	Ukraine
URG	Uruguay (Eastern Republic of)
USA	The 48 contiguous States of the United States of America and the District of Columbia (excludes the States of Alaska and Hawaii)
UZB	Uzbekistan (Republic of)
VCT	St. Vincent and the Grenadines
VEN	Venezuela (Republic of)
VIR	United States Virgin Islands (St. Croix, St. John, St. Thomas) (not for use in GMF; for ITU use only)
VRG	British Virgin Islands
VTN	Viet Nam (Socialist Republic of)
VUT	Vanuatu (Republic of)
WAK	Wake Island
WAL	Wallis and Futuna Islands
YEM	Yemen (Republic of)
YUG	Yugoslavia (Federal Republic of)
ZAI	Zaire (Republic of)
ZMB	Zambia (Republic of)
ZWE	Zimbabwe (Republic of)



## ANNEX D - MANUFACTURER CODES

This annex contains those manufacturer codes that will be used as part of the data entered in Data Items 340,345, 440 or 445. The table is sorted by manufacturer code.

CODE	MANUFACTURER NAME
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AAC	AACOMM, Inc.
AAE	Atlantic Aerospace Electronics Corp.
AAI	Aircraft Armaments Inc.
AAL	Air Force Avionics Lab
AAM	Alascom Inc.
AAN	AANDERAA Instruments
AAO	Aero Astro LLC
AAR	Andrea Radio Corp
AAS	Aiken Advanced Systems
AAT	Airsys ATM
ABA	ABA Electronics Mechanical System
ABB	Applied Communications, Division of Amstar
ABC	AB Net Corp.
ABR	Amber Electro Design, Inc.
ABZ	ABZ Swiss Industrial Group of Telecommunications
ACA	Aircraft Accessories Corp.
ACC	ACE Communications
ACE	Aeronautical Communications Equipment Inc.
ACI	Air Communications Inc.
ACL	ACR Electronics
ACM	ASCOM
ACN	ACE R/C Inc.
ACO	Adcole Corp.
ACR	Acrodyne or Acrodyne Industries Inc.
ACS	AC Sparkplug Co.
ACT	ALCATEL
ACU	Antenna Corporation of America
ACW	Allen D. Cardwell Co.
ADA	Advanced Receiver Research
ADC	Advanced Electronics
ADD	Addison Industries Ltd.
ADE	Advanced Electromagnetic Inc.
ADF	AEL Defense Corporation
ADI	Advance Communications Inc.
ADL	Adler Electronics Co. or Adler Educational Systems Division
ADM	Admiral Corp.
ADN	Advanced Navigation Inc.
ADO	Advanced Development Laboratory
ADP	Audiopack Technologies Inc.
ADR	Adams Russel
ADS	General Electric/Astro Space Division
ADT	Advanced Videotech Corp.
ADU	ACS (Advanced Communications System Inc.)
ADV	Audio-Vac
ADY	Aerodyne
AEA	AEA Electronic Ltd.

AEC Allied Electronics Corp.  
 AED Aero Electronics Development  
 AEI Avion Electronics Inc.  
 AEL American Electric Laboratories Inc. or American Electronic Laboratories  
 AEM Applied Electro Mechanics, Inc.  
 AEO Aer-O-Com  
 AEP Aviation Electric Pacific Ltd.  
 AER Aeronautical Electronic Inc.  
 AES Aerosonic Corp.  
 AET Aertech Inc.  
 AEX Amex Systems, Inc.  
 AFA A.F. Antronics  
 AFC Antennas for Communications  
 AFL Air Force Lab Built  
 AGA Aero Geo-Astro Corp.  
 AGC Alligator Communications, Inc  
 AGI Agilent  
 AGN AGA Navigation Aids Limited  
 AHI Aleth Inc.  
 AHS A. H. Systems, Inc.  
 AIA Alpha Industries, Inc.  
 AIC Atmospheric Instrumentation Research Corp.  
 AID Audio Intelligence Devices Inc.  
 AIE Aire-Sciences, Inc.  
 AII Atmospheric Instrument Research, Inc.  
 AIL Airborne Instrument Laboratories  
 AIN Ainslie Corp.  
 AIO AIRONET  
 AIR Aireon Manufacture Corp.  
 AIS Air Science Inc.  
 AJE Aerojet Electrosystems  
 AJT Aerojet Precision Weapons Co.  
 AKO Polyot Aviation and Space Association  
 ALA Alakai Electronics  
 ALC Applied Research Corp.  
 ALD Alder Electronics Inc.  
 ALE Alfred Electronics  
 ALF Alford Manufacturing Co.  
 ALG Allgon Antenna AD  
 ALI Advance Devices Lab. Inc.  
 ALL Allison Electronics  
 ALM Alcom Limited  
 ALN Alenia Spazio  
 ALO Alineco  
 ALP Aleph Inc.  
 ALR Allister  
 ALS American Laser Sys Technology  
 ALT Altech Lansing  
 ALU Aluma Tower Co.  
 ALV Alva Radio Industries  
 AMC Aeornca Manufacturing Corp.  
 AMD AMD Electronics  
 AME AMECO Equipment Corp.  
 AMF American Machine and Foundry Co.  
 AMH Amherst Systems, Inc.

AMI Amecom Division  
AML Amplica, Inc.  
AMN American Nucleonics Corp.  
AMO American Optical Corp.  
AMP Amphenol Canadian Ltd. or Amphenol Dist. Division  
AMQ Als Marine Radio  
AMR Aircraft-Marine Radio Corp.  
AMS American Systems  
AMT Amcor  
AMX Ampex Corp.  
ANA Andrew Antenna Corporation Ltd.  
ANC Andrew California Corp.  
AND Andrew Corp.  
ANE Antenna Electronics Co.  
ANF Aeronutronic Ford  
ANI Antac Industries, Inc.  
ANL Antenna Laboratories Inc.  
ANM Anram Electronics  
ANN Anderson Lab  
ANP Antenna Products Co.  
ANR Antenna Research Associates  
ANS Antenna Specialists Co.  
ANT Arnet  
ANX Antenex, Inc.  
ANY Any & Company Ltd.  
ANZ Anzac Industries  
AOA Allen Osbourne Associates, Inc.  
AOC Air Associates Co.  
AOM Air Comm Electronics  
AOP Aerospatiale  
AOR AOR, Ltd.  
APA Applied Specialities Inc.  
APC All Products  
APD Aircraft Products Co.  
APE Apelco or Applied Electronics Co.  
API Applied Research, Inc.  
APN Applied Concepts  
APO Apollo Manufacturing Co.  
APP Applied Communications  
APS Applied Systems Engineering  
APT Applied Technology  
APV Applied Devices Corp.  
ARA ARTAIS Inc.  
ARB Artars Inc.  
ARC Aircraft Radio Corp.  
ARD A.R. & D. Co.  
ARE Atlantic Research Corp.  
ARF ARF Products, Inc.  
ARH Arcata Associates, Inc.  
ARI Aerospace Research Inc.  
ARJ Aeronautical Radio Inc. or ARINC  
ARK Arkay International Inc.  
ARL Atir Limited  
ARM Armstrong Transmitting Corp.  
ARN Aerotron, Inc.

ARO Aironet  
ARP Aerospatiale  
ARR Amplifier Research Corp.  
ARS Associated Radio Service Co.  
ART Allied Radio Shack  
ARV Arvin Industries Inc.  
ARW Aero Wave  
ARX ARTEX Inc.  
ASA Asahi Optical Co.  
ASC Astronomics Corp.  
ASE Astral Electronics Inc.  
ASG Allied Signal Commercial Aviation System  
ASI Alto Scientific Inc.  
ASK AMSC Skycell, Inc.  
ASM Astromarine Products Corp.  
ASN Aselsan  
ASP A/S S.P. Radio  
ASQ AEI: Electronics Ltd. or Associated Electrical Industries  
AST Astro Communication Laboratories or Astaron Electronics Ltd.  
ASU Astronautics of America  
ASW Air Target Sweden  
ASY Antenna Systems Inc.  
ATA Atacs Corp.  
ATB ATCI Antennas  
ATC Astro Telecom Corp.  
ATD American Training Aid  
ATE Advanced Tech Talk  
ATF Advanced Techcom Inc.  
ATG Antenna Technology Communications, Inc.  
ATH Antech Corp.  
ATI Amerasia Technology Inc.  
ATL Atlantic Instrument & Electronics Inc.  
ATM Automation Inc.  
ATN Advanced Telemetry International  
ATO Autotape  
ATR Airtronics Inc.  
ATS Advanced Telemetry Systems, Inc.  
ATT American Telephone & Telegraph  
ATW ATA Defense Industries Inc.  
ATX Advanced Training Systems  
AUA Austin Custom Antennas  
AUD Audio-Sine, Inc.  
AUM Austin Microwave, Inc.  
AUP Autophon  
AUR Autronics  
AUS Austron  
AUT Autonetics  
AVA Avanter Inc.  
AVC Avco Corp.  
AVI Avitron Inc.  
AVK Avantek  
AVM AVM Instrument Co.  
AVN Aerovironment  
AVS Advanced Countermeasures Systems  
AVT Avtek Co.

AVX Audiovox  
 AXM Anixter-Mark Co.  
 AYD Aydin  
 AYI Airport Systems International, Inc.  
 AZD Azden, Inc.  
  
 BAA Ball Aerospace  
 BAB Babcock Electronics Corp.  
 BAC Barry Research Corp.  
 BAD BAE Systems  
 BAE Barth Engineering & Mfg. Co.  
 BAI Baird Corp.  
 BAK Backgrounds Unlimited, Inc.  
 BAL Ball Brothers  
 BAP British Aerospace Public, Ltd.  
 BAR Barrett Electronics  
 BAS Bauer Electronic Manufacturing Co.  
 BAU Bauer Electronics Corp.  
 BAY Bayside Electronics Co.  
 BBR Brubaker Mfg. Co., Inc.  
 BCA Babcock Aerospace  
 BCC British Communications Corp.  
 BCD Bogen Comm Division Lear Siegler  
 BCO Benco TV Associates Ltd. Canada  
 BDM BDM Corp.  
 BDS Bidirectional Microwave Systems  
 BEB Beckman/Berk  
 BEC Beckman Instruments Inc.  
 BED Berkeley Division of Beckman Instruments Inc.  
 BEE Beech Aircraft Corp.  
 BEG Bendix/King Mobile Communications  
 BEI Bayside Electronics Inc.  
 BEL Bell Telephone  
 BEM Belair Electronic Laboratory  
 BEN Bendix Corp. or Bendix Aviation Corp.  
 BER Berteau Products or Berteau Corporation  
 BET Beta Co.  
 BHA India Bharat  
 BHC Bell & Howell Communications Co.  
 BIG Biggs Associates Inc.  
 BII Bison Instruments Inc.  
 BIO Biocom Inc.  
 BIR Bird Electronic Corp.  
 BIT Bitro  
 BJH Bunnell J.H. Co.  
 BKG BKM Electronics  
 BKM B-K Manufacturing Co.  
 BKR Becker Avionics  
 BLA Blau-Knox Co.  
 BLH Bell Helicopter Textron, Inc.  
 BLI Browning Laboratories, Inc.  
 BLS Balise  
 BLU Bludworth or Bludworth Marine Division  
 BMR Benmar  
 BMS Broadcast Microwave Services

BNM Benmar Division of Computer Equipment  
BNR Benrad, Inc.  
BOA Boeing Aerospace  
BOE Boeing Aircraft  
BON Bonner Specialties  
BOP Bogan-Presto  
BOT Boonton Electronics Corp.  
BRA BR Communications  
BRC Belmont Radio Corp.  
BRD Broadcomm  
BRE Brelonix, Inc.  
BRI Bristol Aerospace Ltd.  
BRL Balistic Research Laboratory  
BRO Browning Communications Associates  
BRT Broadcast Electronics  
BRU Brunswick Co.  
BRW Bunker Ramo World Services Corp.  
BRZ Breezcom Inc.  
BSC British Standard Cable Co.  
BTA Benco TV Associates, Ltd.  
BTH British Thompson Houston, Ltd.  
BTI Burle Technologies, Inc.  
BTL Blonder Tongue Laboratory, Inc.  
BTX Bartex Co.  
BUD Budelman Electronics Corp.  
BUK Beukers Co.  
BUR Burton Instrumentation, Inc.  
BUT Butler National Corp.  
BWC Benrus Watch Co.  
BWI Barker Williamson  
BZR Bonzer, Inc.

CAA Canadian Arsenals, Ltd.  
CAB Campbell Manufacture Company, Ltd.  
CAC Cessna Aircraft Co.  
CAD Cadre Division of Amphenol  
CAE Canadian Aviation Electronics  
CAH Capehart Corp.  
CAI Communication Associates, Inc.  
CAL Cornell Aeronautical Laboratories, Inc.  
CAM Canadian Marconi  
CAN Canoga Electronics Corp.  
CAP Communications Applied Technology  
CAR Canadian Radio Corp.  
CAT Canadian Telephone Co.  
CAW Canadian Westinghouse  
CBC Columbian Bronze Corp.  
CBE Crown Broadcast Electronics  
CBM CBM Electronics  
CBR Cober Electronics, Inc.  
CBW Cable Waves  
CCA CCA Electronics Corp.  
CCB Control Chiefs, Inc.  
CCC Cadion Communications Corp.  
CCD Control Industries

CCE Comelit Compagnia Electronics  
CCF Coastal Climate Company  
CCH Consultants Choice, Inc.  
CCI ommunications Carriers, Inc.  
CCJ Communications Co., Inc.  
CCK Carlson Communication, Inc.  
CCM Communications Components Corp.  
CCO Colt Communications Corp.  
CCP Continental Electric Corporation  
CCR Coherent Radiation Co.  
CDB Computing Devices Co.  
CDC Control Data Corp.  
CDI Consultants and Designers, Inc.  
CDP Codan PTY. Ltd.  
CDN Cardian Electronics  
CDO Canadian Department of National Defense  
CDR Codar Ocean Sensors  
CDW Cardwell Mfg. Co.  
CEC Columbus Electronics Corp.  
CED Cleveland Electronics, Inc.  
CEE Communications Equipment Engineering Co.  
CEG Ceragon Networks Inc.  
CEI Cleveland Electronics, Inc.  
CEL Colorado Electronics  
CEM Continental Electronics Manufacturing Co.  
CEN Communications Engineering Co.  
CEO Celesco Industries  
CER Centry Research Corp.  
CES Checkpoint Systems, Inc.  
CET CETEC Vega  
CEU Centurion International, Inc.  
CFD Camfield Mfg. Co.  
CFM California Microwave  
CGE Canadian General Electric Co. or Canadian GE Company, Ltd.  
CHA Channel Master Corp.  
CHD Childs  
CHE Challenger Electronics Corp.  
CHI Columbian Hydronxionics Inc.  
CHK Checker Electronics Corp.  
CHL Chelton, Inc.  
CHR Chris Craft Corp.  
CHT Chester Electronics  
CHU CHU Associates  
CHV Chance Vought Aircraft Corp  
CIA Campatnia Industrial Aerospace  
CIC Cubic Industrial Corp.  
CII Communications Industries, Inc.  
CIL Cossoe Intruments, Ltd. (UK)  
CIN Cincinnati Electronic Corp.  
CIR CIR Industries  
CIT Citizens Radio Corp.  
CKC Cook Communications Corp.  
CLA Clarion Corp.  
CLC Control Laser Corp.  
CLD Clegg Division of International Signal & Control

CLE Clegg Laboratories, Division of Squires-Saunders Inc.  
CLF California Amplifiers  
CLI Clark Instrument Co.  
CLM Clairmonte Industries  
CLN Calspan Corp.  
CLT California Technology  
CLW Celwave Systems  
CMB Cambridge Consultants  
CMC Comet Company, Ltd.  
CME Century Metal Parts Corp.  
CMI CMI, Inc.  
CML Communications Measurement Laboratory  
CMO Canadian Motorola  
CMR COMSAT, RSI  
CMS Cosmos Industries  
CMT Communitronics  
CMU Communitronics Ltd  
CMW Comwave  
CNA China Electronic Import and Export Corp.  
CNC Conic Corp.  
CNE Com/Nav Electronics  
CNI Contraves Italiana  
CNN Cannon Electronics  
CNP Conspec Controls Inc.  
CNR Conifer  
CNT Comant  
CNY Canyon Communications Corp.  
COA Communication Specialities  
COB Cobra  
COC Communication Co.  
COD Conductron Corp.  
COE Communication Electronics Co.  
COH Cochran  
COI Comtech Lab, Inc.  
COK Cook Electric Co.  
COL Collins Radio Co.  
COM Comrex  
CON Continental Electronics, Ltd.  
COO Coro Metrics Medical Industries  
COP Communications Products Co.  
COR Continental Radio  
COS Cosser Electronic  
COT Contraves AG  
COU Courier Communications, Inc.  
CPA Computalert  
CPD Compudyne Corp. EWI Division  
CPL Codan Pty, Ltd.  
CQP Cinequip, Inc.  
CRA Craig System, Inc.  
CRB Commercial Resources Communications  
CRC Collins Radio of Canada  
CRE Comaire Electronics  
CRF Crofs Electric Co.  
CRH Crouse-Hinds  
CRN Crylarm



CRO Crosley  
 CRP Concord Electronics Corp.  
 CRR Colonial Radio Corp.  
 CRT Cartwright Electronics Inc.  
 CRU Cruise Technology  
 CRY Carry Phone Corp.  
 CSA CSI Electronics  
 CSC Customs Signal Corp.  
 CSI Control Science, Inc.  
 CSP Communications Specialists  
 CSR Citizen Ship Radio Corp.  
 CSS Communications Satellite Corp.  
 CTA CTA Space Systems  
 CTC CTI Corp.  
 CTM Continental Microwave and Tool Co.  
 CTN Chemrad Tennessee Corp.  
 CTP Carterphone Communications  
 CTR Catttron, Inc.  
 CTT Connecticut Telephone & Electric  
 CUB Cubic Co.  
 CUC Communications Devices Co.  
 CUL Culbertson Industries, Inc.  
 CUM Custom Electronic Manufacturing Co.  
 CUR Curtis Wright Corp.  
 CUS Cush Craft  
 CUT Cutler Hammer Inc. or AIL Division of Cutler Hammer  
 CVL Carvill International Corp.  
 CVR Convair  
 CWE Comwave  
 CWI Cartwright, Inc.  
 CWR C.W. Radiation Co.  
 CYB Cybermation  
 CYL Cylink Corporation  
 CYT Cybernet International, Inc.

DAD Door Alarm Devices Corp.  
 DAE Davco Electronics Inc.  
 DAG Dage Electric Co.  
 DAM Danmar  
 DAN Daniels Electronics Limited  
 DAP Dayton Aircraft Products Inc.  
 DAR Dare, Inc.  
 DAT Data Control Systems  
 DAV Dalmo Victor Co.  
 DAY Daystrom, Inc.  
 DBM Three DBM Systems  
 DBS DeBernardi Scientific Corp.  
 DCE Decatur Electronics, Inc.  
 DCF DCF Systems, Ltd.  
 DCI Defense Communications Engineering Inc.  
 DCM Delcom  
 DEA Decca Radar Ltd. UK  
 DEB DEBEG-GMBH  
 DEC Decibel Products, Inc.  
 DEF Deferral

DEG EL (Design Engineering Lab, Inc.)  
DEI Defense Electronics  
DEL Delmar Engineering Laboratories  
DEM Demco Electronics  
DEN Denel Aerospace Group  
DER Dentron Radio Corporation  
DES Delstar Corp.  
DET Detroit Bullet Trap Co.  
DEV Develco, Inc.  
DEW Dewey GC, Inc.  
DFN Delfin  
DGI Dayton Granger, Inc.  
DGR Douglas Randall Div. of W.K. Radio Alarm Box DHVDHV, Inc.  
DIC Diamond Antenna-Microwave Co.  
DIE Dielectric Products Engineering Co., Inc.  
DIG Digital Radio  
DIL Diamond Laboratories  
DIM Dimick Manufacture Corp.  
DIR Direction Corp.  
DIT Digitize, Inc.  
DIV Divco Wayne Corp.  
DIX Dixon Industries Corp.  
DJC Dickey-John Corp.  
DJH Dewitt, John H.  
DLA Dumont Division of Ling Altec, Inc.  
DLB Denro Lab  
DLC Dynalab Corp.  
DLF Dell Space Star  
DLN Del Norte  
DMC Digital Microwave Corp.  
DMD Dyna Magnetic Devices  
DMI Data Marine International  
DMR Dubose Marine Radio  
DMT Defiance Machine Tool Co.  
DNE DNE Technologies, Inc.  
DNS Decca Navigator Systems, Inc.  
DNT Del Norte Technology, Inc.  
DOE Domestic Radio  
DOI Domino, Inc.  
DOL Doolittle Radio, Inc.  
DOM Dorne Margolin, Inc.  
DOP Davidson Optronics  
DOR Dorsett Laboratories  
DOS Dorsett Electronics Division (LaBarge, Inc.)  
DOU Douglas Aircraft  
DOW Dow Chemical Co.  
DPA Dapa Communications, Inc.  
DPR Data Products, Inc.  
DRA Drake RF Co.  
DRC Dollar, Robert Co.  
DRD Dero Research Development Corp.  
DRG Deskin Research Group  
DRI Decca Radar, Inc.  
DRK Data Radio Corp.  
DRP DRS Precision Echo, Inc.

DRS Dressler Engineering, Inc.  
DSC DSC Communications  
DSI Daytron Systems, Inc.  
DSY Defense Systems, Inc.  
DTC DTC Communications  
DTE Daytong Electronics, Ltd  
DTM Datum  
DTS Data Transmission Science, Inc.  
DTW Datawell  
DUB Dubrow Development Co.  
DUM Dumont Laboratories or Dumont, Allen B. Laboratories, Inc.  
DUT Duelatron  
DVR Diversitel Communications, Inc.  
DVS Davis Co.  
DVT Dav-Tron Co.  
DXR DX Radio Corp.  
DYA Dynalec Corp.  
DYC Dynamic Communications  
DYM Dymec  
DYN Dynatronics, Inc.  
DYR Dynair Electronics  
DYS Dynascan Corp.

EAG Eagle-Picker Industries, Inc.  
EAI Elta-Ashdad Israel  
EAK Easker  
EAR Earmark, Inc.  
EAS Eastern Industries, Inc.  
EAT Eagle Technologies, Inc.  
EBC EB Corp.  
EBN EB-Nera  
EBP Emcee Broadcasting Products Inc.  
ECC ECI Telecom Ltd.  
ECI Electronics Communications, Inc.  
ECL Eaton Corp. AIL DIVN.  
ECM Encomm, Inc.  
ECO Econolite  
ECR Edcor  
ECT Electrotape  
EDA Electro Data, Inc.  
EDC Electronic Development Corp.  
EDE Environment Development Corp.  
EDI Edison Pageitalia  
EDL Edler Industries  
EDO EDO Corp.  
EDR EDO Aire  
EDZ Electronic Devices Corp.  
EEB EEB (Electronic Equipment Bank)  
EEC Electronic Engineering Co.  
EEE EMCEE, Co.  
EEI EICO Electronics Instruments Co.  
EEL Emerson Electric Co.  
EER EER Systems  
EES Elisra Electronics System, Ltd.  
EFD EF Data

EGD Electrogarde, Inc.  
EGG Ernst, Grier Germerhausen Co.  
EGX Energy-Onix  
EII EMC Instrument Co.  
EIM Eitel McCullough, Inc. (EIMAC)  
EIP Electromatic, Inc.  
EIT Eitel Electronics  
EKA Eureka Sys, Inc.  
EKP EK Products, Inc.  
ELA Ellason  
ELB Electrolab  
ELC Electronics Concepts, Inc.  
ELD Eldico Electronics  
ELE Electron Corp.  
ELF Electrofact NV  
ELI lectrac, Inc.  
ELL Electronic Laboratories, Ltd.  
ELM Electronic Material International, Ltd.  
ELO Eldorado Electrodata  
ELR Electrofab  
ELS Electromagnetic Sciences, Inc.  
ELT Electrotechnic Corp.  
ELU ELTS Unlimited, Inc.  
ELY Eldyne, Inc.  
EMA Electro Magnetic Sciences Co.  
EMB Emergency Beacon Corp.  
EMC Electronics Missiles Communications, Inc.  
EMD Electronics & Manufacturing Co.  
EME Emerson Research Labs  
EMH Electro-Mechanics Co.  
EMI EMI-Cossor Electronics Ltd. or EMI Marine Division  
EML EMI Electronics, Ltd.  
EMP Electromagnetic Processes, Inc.  
EMR Electro Mechanical Research, Inc.  
EMS Electrometrics  
EMT EMR (Sangamo Weston, Inc.)  
EMW Eastern Microwave Corp.  
ENA ENAC/Triton Corp.  
ENC Electronic Navigation Corp.  
END ENDECO  
ENG Engineering Services  
ENI Electronic Navigation Instruments  
ENR Environmental Research Institute  
EOI Elmer (Italy)  
EOS Electro Optical Systems  
EPL Epsilon Lambda Electronics Corp.  
EPS EPSCO, Inc.  
ERA Ericsson, L.M. Ltd.  
ERC ERCO Radio Laboratories  
ERD Emhiser Rand  
ERI Electronics Research Industries  
ERM Erim International Inc.  
ERN Erichson  
ERP Erapsco  
ERX Emhiser Research, Inc.

ESC ESCO  
 ESD ESL, Inc.  
 ESE Electronic System Technology  
 ESG Eurosatellite GMBH  
 ESI Energy Systems, Inc.  
 ESL Electromagnetic Spectrum Laboratory  
 ESM Espey Manufacturing Co.  
 ESN Espey Mfg Electronics  
 ESP Electronic Speciality Co.  
 ESQ Electronic Signal Products  
 ESR Esterline  
 ESS Electronic Support Systems, Inc  
 EST Electric Service Co.  
 ESY E-Systems  
 ETC Electromagic Technology Corp.  
 ETE Enterprise Electronics, Inc.  
 ETN EMS Technologies LST  
 ETO Electro Systems International  
 ETR Ecatek, Inc.  
 ETS Electronic Systems Technology  
 EUU European Antennas  
 EVC Electric Voice Corp.  
 EXE Executive Communications  
 EXI EXICOM New Zealand, Ltd.  
 EXT Executone, Inc.  
 EXX EXETEX  
 EYR Eyring Research Institute

FAA Federal Aviation Administration  
 FAC Fairchild Engineering Corp.  
 FAG Fargo Co.  
 FAI Fairchild Stratos  
 FAL Frant, Alan I.W.  
 FAM F & M Electronics  
 FAN Fannon  
 FAP Fran Air Products Co.  
 FAR Farnsworth TV Radio  
 FAS Ford Aerospace Corp.  
 FCC Federal Communication Corp.  
 FCM Fairchild Camera and Instruments  
 FCO FINCO  
 FDC Fairchild Data Corporation  
 FEC Farinon Electric  
 FED Federal Telephone Radio Corp.  
 FEI Florida Communications and Electronics, Inc.  
 FEL Frequency Engineering Laboratories  
 FEM FEMCO, Inc. or FEMCO Div. Gulton Industries  
 FER Ferguson Communications, Inc.  
 FET Federal Telegraph Co.  
 FFE F-F Electronics  
 FGE F. G. Engineering  
 FGI Fleetwood Group, Inc.  
 FHM F & H Manufacturing Corp.  
 FIB Fibercom  
 FIC Ferritronics

FIG Figgie International  
FIL Filmdex Corp.  
FIN Finney Co.  
FLA Flam Russell  
FLE Flightline Electronics  
FLL Flight Refuel, Ltd.  
FLO Flotronic Products, Inc.  
FLR Flir Systems, Inc.  
FLT Flite-Tronics  
FMI Farinon Microwave  
FNT Fonet, Inc.  
FOK Fokker  
FON Fontek  
FOR Fort Worth Tower Co.  
FOS Foster Airdata Systems ,Inc.  
FRA Francis Industries, Inc.  
FRH French Center National D'Etudes Spatiales (CNES)  
FRL Fisher Research Laboratory, Inc.  
FRV Fraser-Volpe  
FRW Freewave, Inc.  
FSC Federal Signal Corp.  
FSI Frequency Source, Inc.  
FSR Federal Signal Radio  
FSS Federal Sign and Signal  
FUE Fuchs Electronics  
FUJ Fujitsu Tem Corp. of America  
FUR Furuno  
FUT Futaba  
FWC F.W. Carpenter Manufacturing Co.

GAB Gabriel Corp.  
GAC General Atronics Corp.  
GAD Gates American Corp.  
GAE General Aviation Electronics  
GAI Garmin International  
GAL Granger Associates ,Ltd.  
GAM GAM Electronics, Inc.  
GAP General Avionics  
GAR Garrett Manufacturing, Ltd.  
GAS Grumman Aerospace Corp.  
GAT Gates Radio Co.  
GAW Gamewell Division of Gulf Western  
GBC General Bronze Corp.  
GDC General Development Corp.  
GDE General Dynamics/Electronics  
GDI Godfrey Engineering, Inc.  
GDN Geodynamics Corp.  
GEC GEC Telecommunications, Ltd.  
GEE General Electric England  
GEI Galaxy Electronics, Inc.  
GEL General Electronics Laboratories, Inc.  
GEM Gem Marine Products  
GEN General Electric Corp.  
GEO Geodyne Corp.  
GEP Genesys Systems

GES Geophysical Survey System, Inc.  
 GEV Genave  
 GHH GH Harlow, Inc.  
 GIB Gibson Antennas  
 GIC General Instrument Corp.  
 GII Gulton Industries, Inc.  
 GIL Gilfillan Bros, Inc.  
 GIM Gimeni III  
 GIT Georgia Institute of Technology  
 GLB GLB Electronics, Buffalo, N.Y.  
 GLO Globe Industries  
 GLR G&L Marine Radio  
 GMC General Motors Corp.  
 GME General Microwave Services  
 GMI General Microwave Corporation  
 GMS Galaxy Micro Systems, Inc.  
 GMW Global Microwave, Inc.  
 GNT Grant Applied Physics  
 GOA Goodyear Aerospace Corp.  
 GOM Geomation  
 GON Gonset Corp. or Gonset Division of Aerotron or Dumont Division of Gonset  
 GOT Geotel Development  
 GOU Gould, Inc.  
 GPA Gans, Pugh & Associates, Inc.  
 GPI General Precision Inc., Ltd. (UK)  
 GPL General Precision Laboratories or Singer-General Precision, Inc.  
 GRA Granger Associates or Bauer Broadcast Division of Granger  
 GRC General Radio Co.  
 GRE GRE America  
 GRO Ground Data Corp.  
 GRR Green Mountain Radio Research  
 GRT General Radiotelephone Co.  
 GRU Gruen Watch Co.  
 GRY Gray Radio Company, Inc.  
 GSE General Service Engineering  
 GSS Geo Space Systems, Inc.  
 GTC Granite Telecom Corp.  
 GTE GTE Sylvania  
 GTL GTE Lenkurt  
 GTP GTE Products Corp.  
 GTS Gemtronics  
 GUD Gudeman Co.  
 GUL Gulton  
 GYE Glenayre  
 GYR Gyrodyne Co.  
  
 HAC Harris Corp.  
 HAD Harris Aerospace Systems Divn.  
 HAE Harbor Electronics  
 HAI Hallmark Instruments, Inc.  
 HAK Harkins Radio  
 HAL Hallicrafter Co.  
 HAM Hammarlund Manufacturing Co. or Dumont Division of Hammarlund  
 HAN Handar Company  
 HAP Hornet Antenna Products Co.

HAR Harvey Radio Laboratories, Inc.  
HAS Hastings Raydist, Inc.  
HAY Hays Corp.  
HAZ Hazeltine Corp.  
HBS Huber and Suhner AG  
HCC Hal Communications  
HDL Harry Diamond Lab.  
HDS Household Data Services, Inc.  
HEA Heath Co.  
HEC Hecules Defense Electronics Systems  
HEK Hekimian Laboratories, Inc.  
HEL Hermes Electronics  
HEN Hendys Two Way Radio Service  
HEP Hewlett Packard  
HER Hermer Electronics, Ltd.  
HES Harbor Electronics Services  
HFI Harris Farinon, Inc.  
HIC Harris Intertype Corp.  
HII Herley Industries  
HIQ HI-Q Electronics, Inc.  
HIT Hittite Microwave  
HJH Harrison, John H.  
HKL Henitz & Kaufman, Ltd.  
HLI Holobeam Laser, Inc.  
HMC Hartman Marine Equipment Corp.  
HME Hartman Marine Electronics Corp.  
HMI HM Electronics, Inc.  
HMK Heimark Electronics Laboratory  
HMS Herley Microwave Systems  
HMT Hamtronics  
HOB Hobby Lobby International  
HOF Hoffman Electronics Corp.  
HON Honeywell  
HOR Horizon  
HOU Houston Corp.  
HRB HRB Singer, Inc.  
HRC Henry Radio Co.  
HRM H.R. Smith  
HRS Hendy Radio Service  
HSA Hallands Signal Attaraten  
HSC Hawkeye Systems Corp.  
HSD Halstead  
HSS Hydro Space Systems  
HSY Hartman Systems (Div. of ATO)  
HTC Hughes Tool Co.  
HTI Hamtronics, Inc.  
HTS HT Systems  
HUA Hamilton Standard Division-United Aircraft  
HUB Hubcom (Hubbard Communications, Inc.)  
HUD Hudson American  
HUG Hughes Aircraft Co.  
HUL Hull Electronics Co.  
HUN Huntley  
HUS Hustler  
HYB Hybrid Network, Inc.



HYE Hy-Gain Electronics Corp.  
HYG Hygain Antenna Products  
HYN Hytenna  
HYP Hyperlink Technologies  
HYT Hytel Corp.

IAI Israel Aircraft Industries, Ltd.  
IAL International Aeradio, Ltd.  
IBM International Business Machine Co.  
ICM ICOM  
ICO International Corp.  
ICS Industrial Comm Systems  
IDE IDC Electronics  
IDI Identification Devices, Inc.  
IEC IEC Electronics Corp.  
IEI Intercontinental Electronics, Inc.  
IEM Intermec  
IFD In-Flight Devices Corp.  
IFR Instrument Flight Research Corp.  
IGT Insight Technology  
III Intellitech Industries, Inc.  
IIT IITRI  
IKE Ikegami Electric Co.  
ILS International Laser Systems, Inc.  
IMA ITT Mobile Communications  
IMC International Microwave Corp.  
IMM International Mobile Machine, Inc.  
IMT International Mobile Telephone Systems  
INC INTRAC  
IND Industrial Radio Corp.  
INE Intech, Inc.  
INL Inland Communications, Inc.  
INM Intermic  
INO Inovonics Corporation  
INR Intrelex, Inc.  
INT Interstate Electronics Co.  
INV Internav, Ltd.  
IOT Interstate Oil Transport Co.  
IRC Islip Radio Corp.  
IRE International Radio Electronics Corp.  
ISC International Signal and Control  
ISD ISC Defense Systems  
ISE International Standard Electric Corp.  
ISI IFR Systems, Inc.  
ISS Information Station Specialist  
IST Innerspace Technology, Inc.  
ISY International Ltd.  
ITA ITA Electronic Corp.  
ITB ITT Electron Tube Division  
ITC ITT Telecommunications  
ITD ITT Decca, Inc.  
ITF ITT Defense Communications  
ITG ITT Gilfillan  
ITH Indiana Technical Corp.  
ITI ITI Electronics, Inc.

ITK ITT Kellogg Communication System  
ITM ITT Mackay Marine  
ITO ITT Aerospace/Optical  
ITP International Telephone & Telegraph Corp. or ITT Industrial Products  
ITR Itek Corp.  
ITS ITT Standard  
ITT ITT Federal Laboratories  
ITV ITT Avionics  
IWC Interwave Communications  
IWI Insulated Wire, Inc.

JAB Jaybeam  
JAC JASCO International  
JAH Janco Inc.  
JAM Jampro Antenna Co.  
JAR Robert A. Jones  
JAS Jasik Laboratory  
JAY Jay Tapp Inc.  
JCA J.C. Air  
JCC J.C. Chastain  
JCI Johnson Control, Inc.  
JCP J.C. Penney Company  
JDE John Deere  
JDT Johnson Data Telemetry Corp.  
JEF Jefferson Ray, Inc.  
JEP Jet Propulsion Laboratory  
JER Jerrold Electronics Corp.  
JET Jetronix  
JFD JFD Research-Development Laboratories  
JHS J&H Smith Mfg., Co.  
JHU Johns Hopkins University  
JNL Janel Labs  
JNN Johnson Associates  
JOH Johnson E.F.  
JRC Japan Radio Co.  
JRD RAYJ  
JRL Japan Remote Control Company, Ltd.  
JRS Joes Radio Shop  
JSB J.S. Betts Co.  
JVC JVC Corp.

KAL K and L Microwave Inc., A Dover Tech Co.  
KAM Kaman Electronic Systems Division  
KAR Kaar Engineering  
KAT Kathrein, Inc.  
KAV Kavouras, Inc.  
KAW Kawasaki Industries  
KDC Kyoritsu Dempa Co.  
KDK KDK Inc.  
KEA Kearfott Engineering Corp. USA  
KEB Kebby Microwave Corp.  
KEC KEL Corp.  
KED Kenwood  
KEI Keith Anderson Co. or Keith V. Anderson  
KEL Kelvin Hughes, Ltd.

KEN Kennedy Co.  
 KEY Key Systems, Inc.  
 KFE K-F Electronics  
 KIE Kinn Electronics Corp.  
 KIG Kingfisher  
 KIL Kilgore Corp.  
 KIM Kimball Products Co.  
 KIN King Radio Corp.  
 KIS Kings Electronics Co.  
 KKC Kobe Kogyo Corp.  
 KLM KLM Communications  
 KMC Kinemetrics  
 KMU Kalmus  
 KNI Knight Electronics Corp.  
 KNR Kitronic Labs Inc.  
 KOE Konigsberg Electronics, Inc.  
 KOK Kokusai Electric Co.  
 KOL Kollsman Instrument Corp.  
 KOR KOR Electronics, Inc.  
 KOV Kongsberg Vapenfabrikk  
 KRA Kraft Systems  
 KRD Korad Corp.  
 KRE Kreco Co.  
 KRI Kris Inc.  
 KRL Kahn Research Laboratories  
 KTI Keltec Industries  
 KUB Kubota Kisho Shokki Co.  
 KUS Kustom Signal Corp.  
 KUX Kustom Electronics Inc.  
 KVH KVH Industries, Inc.  
 KYD Kyokuto Denshi  
  
 LAA Los Alamos Technical Associates, Inc.  
 LAB La Barge, Inc.  
 LAF Lafayette Radio or Lafayette Radio & Electronics  
 LAG LAG Engineering  
 LAM LaFayette Micro  
 LAN Lance Antenna Corp.  
 LAP Lapointe Industries, Inc.  
 LAR Largo Electronic Manufacturers Inc.  
 LAS Larson Electronics  
 LAT Latus D.N. & Co.  
 LAV Lavoie Laboratories, Inc.  
 LCA Univ. of Lowell Ctr. for Atmospheric Research  
 LCM Lecom, Inc.  
 LCO Link Communications  
 LDS Loral Data Systems  
 LEA Lear, Inc.  
 LEC Lorain Electronics Corp.  
 LED Lucas Ledex  
 LEE Lenkurt Electric Company of Canada, Ltd.  
 LEG Leigle Instruments, Ltd.  
 LEI Leigh Instruments, Ltd. or Leigh Systems  
 LEN Lenkurt Electric Co.  
 LET Lectrosonics, Inc.

LFC LFE Electronics Corp.  
 LFE Laboratory for Electronics, Inc.  
 LGD L'Garde  
 LGT Logis-Tech Inc  
 LIB Librascope  
 LIG Lightcraft Avionics  
 LII Litton Industries  
 LIL Lincoln Laboratory  
 LIN Ling Systems, Inc.  
 LIR Linkradio or Litton Educational Technical Div. or Gonset Division of Layco, Inc.  
 LIT Litton Systems, Ltd.  
 LIV Livermore Data Systems  
 LKW Linkavit Wireless, Inc.  
 LLC Laset Link Corp.  
 LLE L.L. Electronics  
 LLL Lawrence Livermore Laboratory  
 LMB Lambda RF Systems  
 LNN Linear Corp.  
 LNR LNR Communications, Inc.  
 LOA Los Alamos National Laboratories  
 LOC Lockheed Electronics  
 LOE Loral Electronics Corp.  
 LOG Logimetrics, Inc.  
 LOK Lotek  
 LOM Lockheed Martin Astro Space  
 LOR Lorrain County Radio Corp.  
 LOS Lockheed Sanders, Inc.  
 LOT Lotran, Inc.  
 LPB Low Power Broadcast Co.  
 LPE Lambda Pacific Engineering  
 LRE Lorenz  
 LSB Lear Siegler/Bogen  
 LSC L-3 Space Communications  
 LSI Linear Systems, Inc.  
 LTS LTV Aerospace Defense Co. (Sierra Research Division)  
 LTV Ling Temco Vaught, Inc.  
 LUC Lucos Air Space  
 LUE Lunar  
 LUG Laguna Industry  
 LXE LXE, Inc.  
 LYN Lynch Communications Systems, Inc.

MAA Maxar  
 MAB M/A Comm AC, Inc.  
 MAC Marconi Instruments, Division of English Electronics  
 MAD Midwest Audio Corp. or Madigan Corp.  
 MAE Marine-Air Systems, Ltd.  
 MAF MAFCO  
 MAG Magnavox Co.  
 MAH Martch Co.  
 MAI MAICO Hearing Instruments or Mattel, Inc.  
 MAJ Majestic Radio-Television Co.  
 MAK Mark IV Industries, Ltd.  
 MAL Marelli Lenkurt Electric  
 MAM M/A COMM MAC

MAN Manson Laboratories, Inc.  
MAR Mark Products Co.  
MAS Mid American Relay Systems  
MAT Matsushita Electric Corp.  
MAX Maxson Electronics Corp. (Electronics Design)  
MAY Marine Technical Division of Dayton Aircraft  
MBA MB Associates  
MBC Meteor Communications Consultants, Inc.  
MBE Marcel Bassaulet Electronics  
MBI MIL 3, Inc.  
MBK Mobile Mark Antenna  
MBR Malibu Research  
MCA Micro-Avionics  
MCC Microcom Corp.  
MCD McDonnell Aircraft Corp.  
MCE Micro Electronics  
MCF Microflect  
MCH Mitchell Camera Corp.  
MCI Marconi Radio  
MCJ Marconi Electronics  
MCL Microwave Cavity Laboratory  
MCM McMartin Industries, Inc.  
MCO Micro Communications Co.  
MCS Micronetics  
MCT Micro Control Specialities  
MDC Microdyne Corp.  
MDD McDonnell-Douglas Corp.  
MDI MDM, Inc.  
MDM Microwave Design Manufacturing, Inc.  
MDS Metrodata Systems  
MDT MDTT, Inc.  
MDY Microwave Data System  
MEC Mechanical Product, Inc.  
MEE Metric Engineering  
MEG Meggiorian Group  
MEI Meisei Denki Co.  
MEJ Micro Electronics, Inc.  
MEL Maryland Electronics Corp.  
MEM Munston Electronic Manufacturing Co.  
MEN Mentor Radio Co.  
MER Metron Instrument Co.  
MET Metrotek Electronics Co.  
MFT Milliflect, Inc.  
MFX Morfax, Ltd.  
MGC Magellan Corp.  
MGI Megapulse, Inc.  
MGN Magnetic AB (Sweden)  
MGS Megastar  
MGW Montgomery Ward  
MHR Minneapolis Honeywell Regulator  
MIA Missawa  
MIB Mitsubishi Denki Co. or Mitsubishi Electric  
MIC Microdot, Inc.  
MID Microfix Instruments, Ltd.  
MIE Mitre Corp.

MIF Micromega, Divn of Bunker-Ramo Corp.  
MIL Micro-Linke Corp.  
MIM Marconi International Marine Co.  
MIN Midland Intl. Corp.  
MIQ Miteq Corp.  
MIR Mirage System  
MIS Mission Engineering Corp.  
MIT Minatronics Corp.  
MIV Microvision  
MIW Microwave Associates, Inc.  
MIZ Mitchell Industries, Inc.  
MKY Mackay Radio-Telegraph Co.  
MLA Malabs  
MLF Microlab/FXR, Inc.  
MLR R. A. Miller Industries  
MMA Martin Marietta Air Space  
MME Model Engineering and Manufacturing Corp.  
MML Micromil Electronics, Ltd.  
MMM Master Mobile Mounts, Inc.  
MMR Mobile Marine Radio  
MMS Matra-Marconi Space  
MMT Millimeter Wave Technology  
MNC Montronics, Inc.  
MNE Mnemonics Inc.  
MNI Microwave Network, Inc.  
MNP Machinostroenie N.P.O.  
MNT Montec (Divn of E-Systems)  
MOA Mosely Associates, Inc.  
MOB Mal Mobley  
MOC Model Rectifier Co.  
MOD Modar Electronics  
MOE Monaco Enterprises, Inc.  
MOF Mosely Associates, Inc.  
MOL Mobilet Corp.  
MON Monitor Electronics  
MOO Moog Industrial Control Corp.  
MOR Morad Electronics Corp.  
MOS Mosely Electronics Co.  
MOT Motorola Corp.  
MOX Mobile Communications  
MOY Monsanto Co.  
MPC Multi-Products Co.  
MPD Microwave Power Devices, Inc.  
MPH MPH Industries, Inc.  
MPI Microwave Products, Inc.  
MPN Multipoint Network  
MPR Melpar, Inc.  
MRA Miller RA  
MRC Midwest Radio Corp.  
MRE Monicor Electronics  
MRI Micro Radionics, Inc.  
MRM Morrow Radio Manufacturing Co.  
MRN Mariner  
MRR Marti  
MRS Micro Systems, Inc.

MRT Marti Electronics  
 MRW Microwave Resources, Inc.  
 MRX Mitrex  
 MRZ Marantz  
 MSA Massa Products  
 MSC Microwave Service Co.  
 MSD Marconi Space and Defense Systems  
 MSM M2 Antenna Systems Inc  
 MSP Microwave Speciality Corp.  
 MSR Mid-State Radio  
 MSY Meteric Systems Corp.  
 MTB Micro-Now Instruments Co., Inc.  
 MTC Micro-Tel Corp.  
 MTG Mei Technology  
 MTH Martech, Inc.  
 MTI Mobile Telesystem, Inc.  
 MTL Maritime Telecommunications Network, Inc.  
 MTN Monitron Corp.  
 MTP Military Technology PTY, Ltd.  
 MTR Meteor, Communications Corp.  
 MTS Mobile Telesystems  
 MTX Marintek  
 MUE Murphy Electronics Division of Rank Corp.  
 MUI Multronics, Inc.  
 MUL Multi-Elmac Co.  
 MUN Muniquip Co.  
 MUP Multiplex Services Corp.  
 MUS Multitech Power Systems/Avionics  
 MUT Multitone Electronics, Ltd.  
 MUX Munston Electronics Manufacturing Corp.  
 MUZ Munston Manufacturing & Service Inc.  
 MVI M/A-COM Video Systems, Inc.  
 MWA Microwave Antenna Designs, Inc.  
 MWB Microwave Bypass Systems  
 MWC Microwave Control Co.  
 MWD Microwave Devices, Inc.  
 MWI Microwave Power, Inc.  
 MWO Microwave Radio Corp.  
 MWS Microwave Sensors  
 MWT Marconi Wireless Telegraph Co., Ltd.  
 MXI MAXRAD, Inc.  
 MXL Maxwell Electronic Corp.  
 MXN Maxon Electronics, Inc.  
 MXP Max Planck Institute  
 MXR Min X Radio  
 MZE M Z Enterprises  
  
 NAC National Co.  
 NAD Naval Air Dev. Ctr.  
 NAH North American Philips  
 NAK Nankai Musen Co.  
 NAL NALCO  
 NAM Naval Ammo Depot  
 NAN Nanayo Electric Co.  
 NAP Nevada Air Products Co.

NAR Narda Microwave Corp.  
NAU Nautel  
NAV Naval Avionics  
NAW Naval Air Warfare Ctr. Weapons Div.  
NCF National Center for Atmospheric Research  
NCR National Cash Register of Canada  
NDC Nihon Denki Co.  
NDS Norand Data Systems, Inc.  
NEA NEC America, Inc.  
NEB NEUTEC  
NEC Nemsclarke  
NEI Nielson Electronics Division  
NEJ NEC (Japan)  
NEL National Electronics Laboratory  
NER Nera  
NET Newtronics, Inc.  
NEU Neulink, Divn of Celltronics  
NEW Newton Co.  
NEX Nextel, Inc.  
NGT National Gateway Telecom, Inc.  
NIC Northwest Instrument Co.  
NIE Nippon Electronic Company Ltd.  
NIM Nihon Musen Co.  
NIN Nissan  
NIO NICOM  
NIS Nissin Electronics, Inc.  
NIT NITECH, Inc.  
NMT New Mexico Tech  
NMU New Mexico State University  
NOC Northrop Corp.  
NOD Norden Division  
NOE Northeastern Engineering Co.  
NOI Nokia  
NOK Novak Electronics  
NOR Northeast Medal Industries  
NOS Naval Oceans System Center  
NOT Naval Ordnance Test Center - China Lake  
NOV Nova-Tech/Avionics or Nova Tech Inc.  
NPC NAPCO Industries  
NPS Naval Post Graduate School  
NRA Northern Radio Co. or Northern Electronic Co.  
NRB NARCO  
NRC National Aeronautic Corp.  
NRD Norand Data System  
NRE Northern Electric Co., Ltd.  
NRL Naval Research Lab  
NRN China North Industries Corp.  
NSA Northstar Electronics, Inc.  
NSI Nady System, Inc.  
NSL Northern Scientific Laboratory  
NST Northstar Technologies  
NTD New Tronics Division  
NTL Northern Telecommunications, Inc.  
NUC Nucomm  
NUR Nurad, Inc.



NUS Naval Underwater Systems Center  
NVC Navcom Defense Electronics  
NVE Naval Engineering Center  
NWC Naval Weapons Center  
NYT N.Y. Technical Institute of Cincinnati

OAI Oklahoma Aerotronics, Inc.  
OAO OAO Corp.  
OAR Ocean Applied Research Corp.  
OCT Octagon  
ODM Odom  
OEC Osborne Electronics Corp.  
OKA Oklahoma Electronics Co.  
OKI OKI Denki Co. or  
OKI Electric Industry Company, Ltd.  
OLS Olson Radio Corp.  
OME Omera (France)  
OMN Omnitek  
OND Oneida Electronics  
OOS Odom Offshore Survey  
OPD Odetics Precision Time Division  
OPE Opseis  
OPM Opto-Mechnik  
OPS Opos Electronics  
OPT Optic Electronic Corp.  
ORB Orbit Electronics  
ORE Oremco  
OSB Oregon State Board of Forestry  
OSC Orbital Sciences Corp.  
OSH Oregon State Highway Dept.  
OSU Oklahoma State University  
OTR Outer Communication Co.  
OTX Omni-Tronix  
OUT Ourercom Electronics Corp.  
OZD Ozalid Division

PAA Pan American Airways  
PAC Piper Aircraft Corp. (Electronics Division)  
PAD Pacific Advanced Engineering, Inc.  
PAE Park Aire Electronics  
PAI Pacific Aerosystem, Inc.  
PAK Packard Bell Electronics Corp.  
PAL Palmer, B. Co.  
PAN Panronics Corp.  
PAR Parsons Electronics  
PAT Patterson H. J.  
PAU Pauldon  
PAV PAVCO  
PAZ Parzen Research, Inc.  
PBI Pickard-Burns, Inc.  
PBR Pro Brand International  
PCC Pace Communications Corp.  
PCE Page Communications Engineers, Inc.  
PCL PC Electronics  
PCM Pacific Communications

PCO Procom Corp.  
 PCR Pacific Crest Corp.  
 PCS Proportional Control Systems  
 PEA Pearce Simpson, Inc.  
 PED Practical Engineering & Development Corp.  
 PEG Peninsula Engineering Corp.  
 PEI Pacific Engineering, Inc.  
 PER Perkin Elmer, Inc.  
 PFE Professional Electronics  
 PFI Pfitzner, Heinz  
 PFR Perfection  
 PGE P.G. Electronics  
 PHA Phase IV Systems, Inc.  
 PHC Philco Corporation of Canada, Ltd.  
 PHD Phelps Dodge  
 PHI Philco Corp.  
 PHL Philips Gloeilampene Abreiken (Neth) or Philips Broadcast Equipment Corp.  
 PHM Philmore Manufacturing Co.  
 PIA Pinson Associates, Inc.  
 PIC P-I-C Communications, Inc.  
 PIE Piezo, Ltd.  
 PIS Picattiny Arsenal  
 PKM P-COM Inc.  
 PLC Plectron Corp.  
 PLE Plessey Company, Ltd. (UK)  
 PLP Phillips Audio Visual Corp.  
 PLR Polestar  
 PMC Patterson Manufacturing Company, Inc.  
 PMR Pacific Missile Range Co.  
 PMT Pacific Missile Test Center  
 PMW Premier Microwave Corp.  
 PMX Primex Wireless Clock System  
 PNH PNH Electronics Co.  
 PNL Pacific Northwest Labs  
 POC Port-Com  
 POE Pointer Electronics  
 POL Polarad Electronics Corp.  
 POM Pomije Electronics Co. or Palomar Instrument Co.  
 POV Port-O-Vox Corp.  
 POX Polytronics Communications or Pro-Line Electronics  
 POY Polytronics Laboratories, Inc.  
 POZ Pole/Zero Corporation  
 PRE Premax Products Division  
 PRI Polytronics Research, Inc.  
 PRL Polar Research Lab.  
 PRN Parsons, Ralph M. Co.  
 PRO Prodelin, Inc.  
 PRS Parisi Antennas  
 PRT Pritchard Brown  
 PRX Proxim  
 PSC Paramax Systems Corp.  
 PSI Public Systems, Inc.  
 PSL Physical Science Lab  
 PST Power Systems Technology, Inc.  
 PTA Polytechnica

PTI Protection Technology, Inc.  
PTL TADS Development Labs, Inc.  
PUL Pulse Engineering, Inc.  
PWI Pacific World Industries  
PYA Pye Corporation of America  
PYC Pye Communications  
PYE Pyle Telecommunications, Ltd. (UK)

QEI QEI Corp.  
QEL Quest Electronics  
QEN Quadrant Engineering, Inc.  
QSC Quanta System Corp.  
QUA Qualimetrics Corp.  
QUC QALCOMM  
QUE QUE Enterprises, Inc.  
QUI Quintron Corp.  
QUT QUALI-TRON

RAA Rad-O-Lite  
RAB RF Sound, Ltd.  
RAC Racal Communications, Ltd.  
RAD Radiation, Inc.  
RAE Racal Electronics, Ltd.  
RAF R&D Assoc. Electronics Navigation Industries, Inc.  
RAG Radian Corp.  
RAI Racal Instruments, Ltd.  
RAJ Ray Jefferson Co.  
RAN Rantec Corp.  
RAP Radio Plane Co.  
RAS Radio Shack  
RAT Ratelco, Inc.  
RAU Raulond-Borge Corp.  
RAY Raytheon Co. or Raytheon Manufacturing Co.  
RCA Radio Corporation of America  
RCE Radio Communications Equipment Engineering, Ltd. (Canada)  
RCI Richmond Communications, Inc.  
RCM RC Manufacturing Co.  
RCN Racon, Inc.  
RCP S&O RC Products  
RCV RCA Victor Company, Ltd.  
RDA Radair, Inc.  
RDB Radio Specialists Co.  
RDC Rome Air Development Center  
RDM Radio Marine Corp.  
RDN Raydyne, Inc.  
RDS Radio Specialty Co.  
RDW Radio Waves Inc.  
REA Realtons Electronics, Inc.  
REB Remcon  
REC Reach Electronics Corp.  
RED Redifon, Ltd.  
REE Reaction Instruments, Inc.  
REF Republic Electronics Films, Inc.  
REG Ross Engineering  
REI Regency Electronics, Inc.

REL Radio Electronics Laboratories  
REM Remler Company, Ltd.  
REN Radio Engineering Laboratories  
REO Remtron  
REP Repco, Inc. or R.G.P. Co.  
RES Resdel Engineering Corp.  
RET Resonant Electronics  
REU Ridge Electronics Corp.  
REV Reeves Instrument Corp.  
REX Rex Bassett, Inc.  
REZ Relco  
RFA RF Solutions  
RFC RF Communications Associates, Inc.  
RFE Rafael  
RFH RF Harris Electronics  
RFI Radio Frequency Communications, Inc.  
RFT R. F. Technology  
RGC Ranger Communications  
RHG RHG Electronics Laboratories  
RHU Radio Holland Group  
RIA Reaction Institute, Inc.  
RIE Rockwell International Electronics  
RII Radio Industries, Inc.  
RIT Ritcon, Inc.  
RIZ Rel, Inc.  
RJG R. J. Gumm Co.  
RLC Realistic Co.  
RMC Relm Communications, Inc.  
RMI Racal Decca Marine, Inc.  
RML Research in Motion, Ltd.  
RMT Remotec, Inc.  
RNS Radionics  
ROB Robinson Electronics  
ROC Recon Optical, Inc.  
ROD Rodelco  
ROE Robinson Engineering Co.  
ROL Royal Exec  
ROM Radio Specialties Mfg. Co.  
ROS Rohde Schwarz  
ROT Rothenbuhler Engineering  
ROW Rowe Industries  
ROX Roxy Ofuna Electronics  
ROY Royal Electronics Corp.  
RQM Racon, Inc. Quality Microwave  
RRC Radio Receptor Co.  
RRH Richard R. Hayes  
RRI Radio Research Instrument Co.  
RSE RS Electronics Corp.  
RSI Radio Systems, Inc.  
RSL Resalab, Inc.  
RSM Radio Specialty Manufacturing  
RSS RS Systems, Inc.  
RST Robertson-Shipmate  
RTK REFTEK  
RTL Radio Tel, Ltd.

RTN Randtron Systems  
 RTR Ritron, Inc.  
 RUS Rust Corp of America  
 RWC Rockwell, Collins  
 RYA Ryan Aeronautical Co.  
 RYC Railway Communication, Inc.  
 RYN Raytron Ltd.  
 RYU Ryukyu Tsushinki Kogyo Co.  
  
 SAA Safe Environmental Engineering  
 SAB SAAB  
 SAC Sabre Communications Corp.  
 SAD Sandia Corp.  
 SAF Safe Link Corp.  
 SAG Sage Laboratories  
 SAI Springer Aircraft Radio Corp.  
 SAL Salco Manufacturing Co.  
 SAM Sampson Co.  
 SAN Sanders Associates, Inc.  
 SAP SA Philips Pty., Ltd.  
 SAQ Sexant Anionique  
 SAR Stoddard Aircraft Radio Co.  
 SAS Sigmas Antenna Systems  
 SAT Sarkes Tarzian, Inc.  
 SAV Space Avionics, Inc.  
 SBA Sideband Associates, Inc.  
 SBE Seaboard Electronics  
 SBR Santa Barbara Research Ctr.  
 SBT Sideband Technology, Inc.  
 SCA Scala Radio Corp.  
 SCC Secode Corp.  
 SCG Satcon GMBH  
 SCH Schuttig Atlantic  
 SCI Scientific Atlanta Co.  
 SCM SCM Melabs, Inc.  
 SCN Scientific Communications  
 SCE Scottcare  
 SCO Scope, Inc.  
 SCR Steinbrecher Corporation  
 SCT Science Applications International Technology, Inc.  
 SCX Scintrex, Ltd.  
 SCY Specialized Control Systems  
 SDC Space Data Corp.  
 SDI Safety Devices, Inc.  
 SDX Serdex Corp.  
 SEA Sears Roebuck Co.  
 SEB Sea Tel, Inc.  
 SEC Struthers Electronics Corp.  
 SEE San Endiron General  
 SEG Solartron Electronics Group, Ltd.  
 SEI Seiscor Manufacturing Co.  
 SEK Seiki Electronics, Inc.  
 SEL Selenia S.P.A. (Italy)  
 SEM Seatron, Inc.  
 SEN Sennheiser Electronic Corp.

SEO SEMCO  
SEP Seaphone, Inc.  
SER Servo Corp. of America  
SES Seismograph Service Corp.  
SET Setchell Carlson, Inc.  
SEV Seavey Engineering Corp.  
SEX Sentrax Perimeter Protection System  
SFC Safecom (Radionics)  
SFI Stanford Telecommunications, Inc.  
SGC Sperry Gyroscope Company of Canada, Ltd.  
SGE Strong Electronics  
SGK Singer Kearfott Co.  
SGR General Precision Laboratory, Inc.  
SHA Shakespeare  
SHD Shadow Technology  
SHI Shiba Electric Co.  
SHK Shank Communication Co.  
SHP Shart Corp.  
SHU Shure Brothers, Inc.  
SIA Stephens Engineering Associates, Inc.  
SIC SRI International  
SID Sierra Digital  
SIE Sierra Electronic Division of Philco  
SIG Signal Communications  
SIH Siemens-Halske  
SIL Spilsbury & Tindall  
SIM Simpson Electronics  
SIN Spectrum Communications, Inc.  
SIP Sippian Ocean Systems  
SIR Sitra  
SIS Sercel Industries Corp.  
SIT SITCO  
SKD Skydata, Inc.  
SKL Spencer Kennedy Laboratories  
SKM Skipper Marine Electronic  
SKN Skanti  
SKV Skyvision  
SKX Skyphone Division  
SKY Skycrafters, Inc.  
SLI Scanwell Laboratories, Inc.  
SLL Shell Development Co.  
SLM Spacelabs Medical  
SLR Sinclair Radio Laboratories  
SLT Satellite Transmission Systems, Inc.  
SMC Southern Marine Corporation  
SMD South Midlands Communications, Ltd.  
SME Smithroot Electronics  
SMG Symbol Technology, Inc.  
SMI Smiths Industries, Inc.  
SML Space Microwave Lab.  
SMP Simoco Pacific PTY Ltd.  
SMO Sierra Misco  
SMR Southern Marine Research, Inc.  
SMT Samson Technologies Corp.  
SMW Southern California Microwave

SNC Sierra Nevada Corp.  
SNE Senses International  
SNF Sarnoff David Research Center  
SNI Sea Marine International  
SNK Sonik Technologies, Inc.  
SNL Sentinel  
SNS Senstar Corp.  
SNT Santec  
SOA Southern Avionics  
SOE Sonex, Inc.  
SOI Solid State Technology  
SOL Soladyne International, Inc.  
SON Sonar Radio Corp.  
SOS Space Ordinance Systems  
SOU Sound-Craft Systems, Inc.  
SOY Sony  
SOZ Southcom International, Inc.  
SPA Spar Aerospace, Ltd.  
SPB System Planning Co.  
SPC Space Technical Laboratories  
SPD Sperry Corp.  
SPE Space Electronics  
SPF SPC Technology, Divn. of Remier Industries  
SPG Space General  
SPI Specific Products, Inc.  
SPK Spike Technologies, Inc.  
SPL Spectrolab, Inc.  
SPM Spectra Physics Co.  
SPN Sparton Electronics  
SPP Simmonds Precision Products, Inc.  
SPQ Spears Associates  
SPR Sperry Corp. or Servo Corporation of America  
SPS Spectra-Physics  
SPT Sparta Electronic Corp.  
SPW Sperry Piedmont Co.  
SPX Specifics Co.  
SPY Sperry Gyroscope Company, Inc.  
SPZ Sperry Marine Systems  
SQA Square D Co.  
SQU Squires Sanders, Inc.  
SRA Smythe Research Associates  
SRC Sierra Research Corp.  
SRD Standard Radio and Telefon ABITT  
SRE Sprengnether Equipment Co.  
SRI Skyway Radio, Inc.  
SRL Scott EH Radio Laboratories, Inc.  
SRM Sierra Monolithics, Inc.  
SRR Sperry Flight Systems  
SRS Scientific Radio Systems, Inc.  
SRT SR Telecom, Inc.  
SRU SATEL Radio USA  
SRV Serv-Air, Inc.  
SSC States Steamship Co.  
SSG Samsung Electronics, Ltd.  
SSI Surface System, Inc.

SSN Sensis Corp.  
 SSR Sensor Systems  
 SSY Stellar System  
 STA Standard Electronics  
 STB Standard Communications  
 STC Standard Telephones-Cables, Ltd.  
 STD Standard Elektrik Lorenz  
 STE Stephenson  
 STF Stanley Electronics Co.  
 STG Stoner-Goral Communications Co.  
 STH Sintra-Thomson  
 STI Stailes, Inc. or Star Lifeline, Ltd.  
 STJ Sanford Telecommunications Institute, Inc.  
 STL Sterling Precision Corp.  
 STM ST Microwave  
 STN Stoner Electronics  
 STO Storno Radio Co.  
 STP Serve-Tek Products, Inc.  
 STQ Stanford Research Institute  
 STR Stromberg Carlson Products Co.  
 STS Standard Electrica S.A.  
 STU Strand Engineering Co.  
 STV ST Research Corp.  
 STW Stewart Warner Corporation of Canada, Ltd.  
 STX SI-Tex Marine Electronics, Inc.  
 SUC Sun Chemical Corp.  
 SUM Summers & Mills  
 SUN Sunair Electronics, Inc.  
 SUR Sur-Tec, Inc.  
 SUT Sutron Co.  
 SVI Savi-Technology, Inc.  
 SVR Svenska Radio  
 SWA Swan Electronic Corp.  
 SWI Swintek Cordless Microphone Co.  
 SWM Southwest Microwave Co., Inc.  
 SWN Southwestern  
 SWR Southwest Research Institute  
 SWS Swiss Phone  
 SYA Syracuse Research Corp.  
 SYC Syscon Corporation  
 SYD Systems Dynamics  
 SYE Systems Engineering & Management Corporation  
 SYL Sylvania Electronics Defense Laboratory or Sylvania Electronics Products  
 SYM Symetrics Engineering Corp.  
 SYN Synergetics  
 SYR Systems Research Laboratories, Inc.  
 SYS Systron Donner Corp (Demornay Bonardi)  
 SYX Syndetix  
  
 TAC Technical Appliance Corp.  
 TAD TAD-American Corp.  
 TAE Tait Electronics, Ltd.  
 TAI Taiyo Musen Co.  
 TAM Tamer Electronics, Inc.  
 TAN Technical Associates of New Orleans



TAO Taco, Inc.  
TAP Technology Applications  
TAS Tasker or Tasker Industries  
TAT Thrane & Thrane  
TAY Taylor Electrical Instrument, Ltd.  
TBL Trimble Navigation  
TBN Tayburn  
TCC Telecom Communications  
TCD Techdyn Systems Corp.  
TCE Telecommunications Corp.  
TCH Techcomm  
TCI Tel Com Industries  
TCL Trio Communications, Ltd.  
TCM TCOM Industries, Inc.  
TCN Technos International Corp.  
TCO Temco Aerosystems  
TCP Tecom  
TCQ Techtest Lmt.  
TCT Transcidtronic  
TDA Tridea Electric Corp.  
TDC Teledyne T/M Co.  
TDE Teledyne Ryan Electronics  
TDI TeleDesign  
TDL Tidelands  
TDS TDS Electronics Company, Ltd.  
TDT Teludisc, Inc.  
TDY Tele-Dynamics  
TEA Tek-Aid, Inc.  
TEB Telco  
TEC Telviso Electronics  
TED Teldex  
TEE Teaberry Electronics Corp.  
TEG Telautograph Corp.  
TEH Telechrome  
TEI Texas Instrument, Inc.  
TEJ Telephone Engineering Corp.  
TEK Te-Ka-De Co.  
TEL Telrex Laboratories  
TEM Telemet Co.  
TEN Teletronix Engineering Co.  
TEO Telemotive  
TEP Tepco Corp.  
TEQ Tenna Corp.  
TER Terra-Com  
TES Technisonic Industries  
TEX Textran Division  
TFC Technology for Communications, International  
TFD Telludift  
TFT Time & Frequency Tech., Inc.  
THA Thales ATM  
THC Thomson CSF  
THE Thorn EMI Electronics, Inc.  
THI Thiokol Chemical Corp.  
THL Technical Electronics Co.  
THN Thorn Microwave Devices

THO Thomas Mold-Die Co.  
 THY Technology Service Corp.  
 TIA Television Technology Corp.  
 TIE Tel Instrument Electronics  
 TII Teledyne Industries, Inc.  
 TIL Transcript International  
 TIN Telinstrument Co.  
 TIS Tadiran Israel Industries, Ltd.  
 TIV Trivec-Avent  
 TKA Tokai Communication Corp.  
 TKC Trio-Kenwood Communications  
 TKK Tekk, Inc.  
 TKL Teklogix, Inc.  
 TKM TEK Mark Company  
 TKS Tokyo Keiki Co.  
 TKT Turnkey Technology  
 TLA Telonica Corp.  
 TLC TRT Groupe  
 TLE Telemus Electronics Systems, Inc.  
 TLF Telefunken Gmbh.  
 TLK Telkoor  
 TLM Telemobile, Inc.  
 TLP Telephonic Corp.  
 TLR Telline Radio  
 TLS Tele-Signal Corp.  
 TLX Telex Co.  
 TMC Technical Materiel Corp.  
 TMD TMC Systems & Power Corp. or Telemotive Division of Dynascan  
 TME Temec Corp.  
 TML TMC, Ltd.  
 TMP TOMOCO Electronics PTY, Ltd.  
 TMR Terma Elektronik  
 TNS Telonics  
 TOA Townsend Associates  
 TOE TOMCO Electronics PTY, Ltd.  
 TOH Thomson-Houston (France)  
 TOK Tokyo Shibaura Electronics Co.  
 TOM Tomcor  
 TOP Topp Manufacturing Co.  
 TOS Toshiba Co.  
 TOY Toyocon  
 TPI TEK Products, Inc.  
 TPL Technology Proprietary, Ltd.  
 TRA Transco Products, Inc.  
 TRB Trans World Communications, Inc.  
 TRC Technical Radio Corp.  
 TRD Traid Corp.  
 TRE Transmitter Equipment Manufacturing Co.  
 TRF TRF Company  
 TRI Tracor, Inc.  
 TRL Trilectric Co.  
 TRM Tram/Diamond Corp.  
 TRN Tran-Com  
 TRO Telurometer Corp.  
 TRP Tri-Com, Inc.

TRQ Transformation Techniques, Inc.  
TRR Transworld  
TRS Tran-Crypt  
TRT Trans Texas  
TRU Truetime  
TRV Jefferson Travis  
TRW TRW Electronics  
TRY Trylon, Inc.  
TRZ Travelers Information Services, Inc.  
TSA Technical Systems Associates  
TSB Transcience  
TSC Teledyne Systems Co.  
TSD Technical Systems Division  
TSE Technical Science  
TSI Tactical Systems, Inc.  
TSS Telesystems, Inc.  
TSY Telemetry Systems, Inc.  
TTC Titian Corp.  
TTI Television Transmission, Inc.  
TTK Tron-Tek, Inc.  
TTN Titan Severe Environment Systems  
TTQ Transformation Techniques, Inc.  
TTS Telescience Transmission System, Inc.  
TTT Tactical Technology, Inc.  
TTX Teltrol Corp.  
TUL Tull Aviation Corp.  
TUR Turner Aircraft Radio, Inc.  
TXA Textron Defense Systems  
TXC Telxon Corporation  
TXS Texscan Instruments  
TYC Tycho-Tech

UAF USN Avionics Facility  
UDE University of Denver  
UDN Uniden  
UEC U.S. Army Electronics Command  
UED United Electro Dynamics, Inc.  
UFI Uniten/Force, Inc.  
UIL University of Illinois  
UMI University of Miami  
UNA Universal Navigation Corporation  
UNC United States Navguide Corp.  
UNI Univac Corp.  
UNM Unimetrics, Inc.  
UNN Unicom  
UNS Unisys Corp.  
UNT United Telecontrol  
USE Use Corporation  
USL United Scientific Laboratory  
USM U.S. Metal Products Co.  
USN Universal Space Network Inc.  
UTC Utilicom, Inc.  
UTE Unitec  
UTI Utica Communications  
UTL UTL Corp.

VAI Vaisala  
 VAL Valcom, Ltd.  
 VAN Van Norman Industries, Inc.  
 VAR Varian Associates  
 VAT Viatec  
 VDC Video Consultants  
 VEC Vector Manufacture Co.  
 VEG Vega Electronics Corp.  
 VEN Ventron Electronics Corp.  
 VEP Visual Electronics Corp.  
 VER Versa-Count  
 VEX Vertex Communications Corp.  
 VFR Valley Forge Research Center  
 VHF VHF Engineering Co.  
 VIA Victoreen Instrument Co.  
 VIC Victor RF-Microwave Co.  
 VID Vidor Scientific, Inc.  
 VIF Verifone, Inc.  
 VIL Vitel  
 VIN Vicon Industries, Inc.  
 VIS Visual Manufacturing Division  
 VIT Vitro Electronics  
 VIX Vista Manufacturing Co.  
 VIZ VIZ Corp.  
 VMI Video Methods, Inc.  
 VNG Vanguard Med Products Co.  
 VOC Vocaline Company of America  
 VOU Vought Corp.  
 VRD Varda Company  
 VRO Varo, Inc.  
 VSC Ventana Sciences, Inc.  
 VSI Viable Systems, Inc.  
 VST Viasat Technologies Co.  
 VTC Vectran Corp.  
 VUA Vector Division of United Aircraft

WAA Washington Aluminum Co.  
 WAB Westinghouse Air Brake Co.  
 WAD Waddell Dynamics  
 WAE Waveband Electronics  
 WAG Waveguide  
 WAL Walco Electronic Co.  
 WAS Washington State Patrol  
 WAT Washington Technological Assn., Inc  
 WAV Wavetek  
 WBA West Bend Autotronics, Inc.  
 WBI Wyoming Biotelemetry, Inc.  
 WBL Weibel Scientific, Inc.  
 WBS Wide Band Systems Inc.  
 WCI Webcor, Inc.  
 WDC Westin Data Comms  
 WEB Webster Manufacturing Co.  
 WEC Western Electric Company, Inc.  
 WED Winston Electronics Division

WEI Ward Electronic Industries  
WEL Well Sentry, Inc.  
WEM Wems, Inc.  
WES Westinghouse Electric Co.  
WET Weight-Tronics  
WEU Western Union Telegraph Co. or Western Union  
WGC Webster Green Co.  
WGT Wandel and Golterman  
WHD Windermere HDS  
WHE Whelen  
WHI White J.L. Co.  
WHM Whistler Marine, Inc.  
WHT Whittaker Corp.  
WIC Wicks Industries  
WIG Wilcox Gay Corp.  
WIH Wightman Electronics, Inc.  
WIK Wilkinson Electronics, Inc.  
WIL Wilcox Electric Corp.  
WIN Wind Data  
WIT Winnet, Inc.  
WJO Watkins Johnson Co.  
WLC Wilson Electronic Corp.  
WMC Weather Measure Corp.  
WMI Wescom Microwave, Inc.  
WMN Wildlife Materials, Inc.  
WMX Western Multiplex Corporation  
WOD Wood and Douglas  
WOE World Engines  
WOL World Radio, Ltd.  
WOO Wood-IVY Systems, Inc.  
WOR Workshop Associates  
WRC Western Radio Communications Corp.  
WRL World Radio Laboratories  
WSD W.S. Deans Co.  
WSI Wireless Sound, Inc.  
WSM Western Space and Marine  
WST Westrex Corp.(Division Litton Systems)  
WTB West Bend  
WTC Wind Turbine Co.  
WTI Wireless Technology, Inc.  
WUL Wulfsberg Electronics  
WVT Wavetronics, Inc.  
WYM Wyman Research, Inc.

XRX Xerox Corp., Electro Optical Systems  
XTR Xetron Corp.

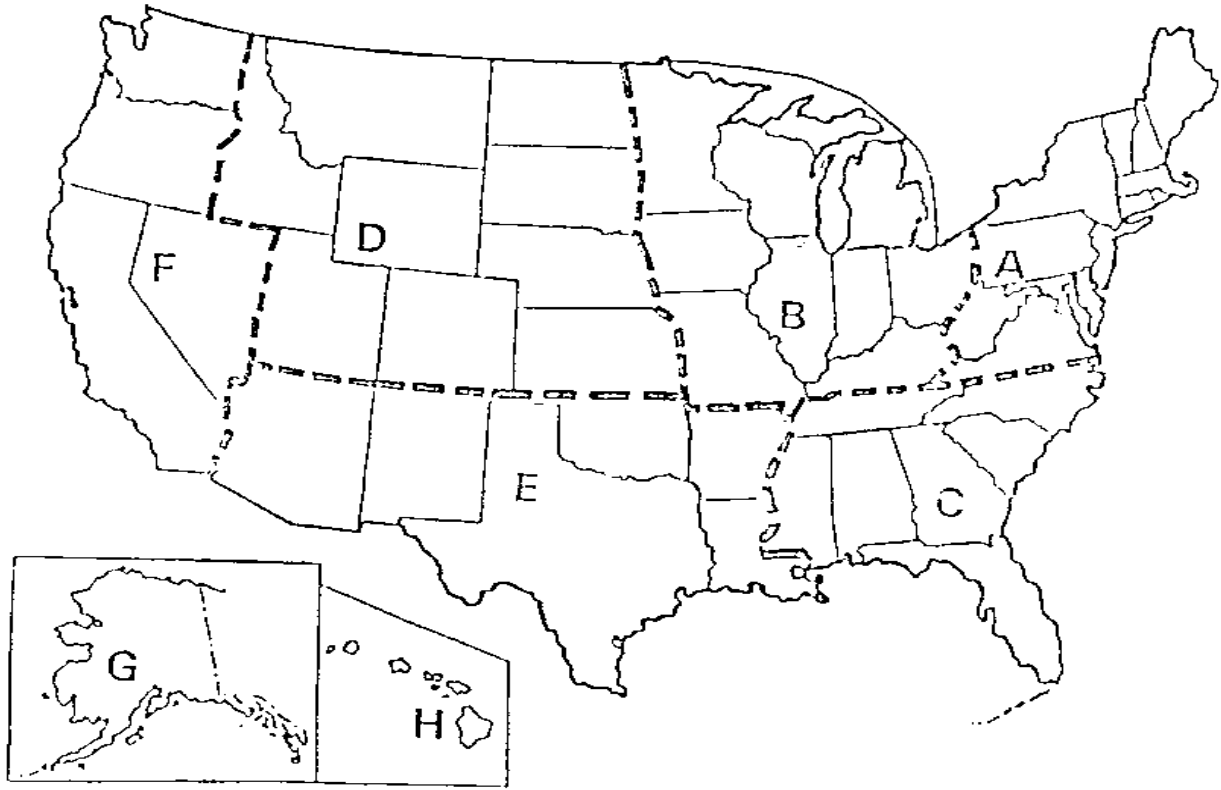
YDI Yarnell Data, Inc.  
YEA Yaesu

ZEL Zellweger Telecommunications  
ZEN Zenith Radio Corp.  
ZEP Zephyrus  
ZET Zeta Laboratories



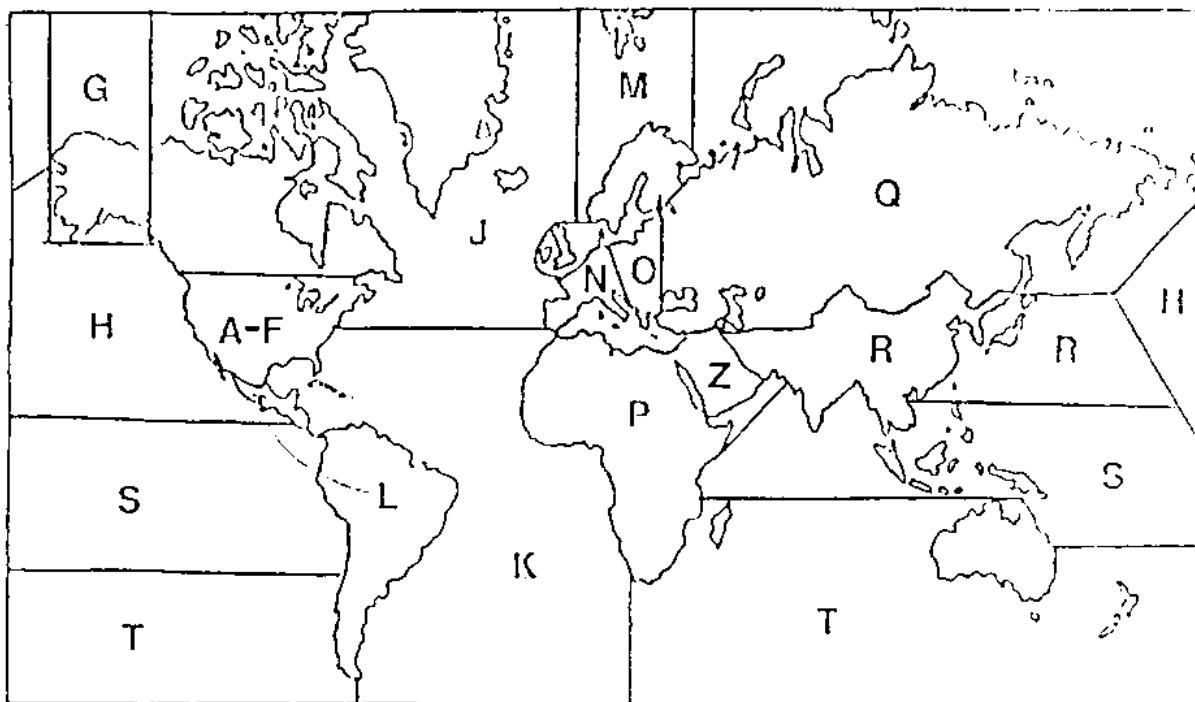
## ANNEX E - JSC MINOR AREA CODES

1. The following minor area codes are used in Data Items 373 and 473 to speed up certain selects for data outputs. This annex is organized to graphically display the minor area codes in figures 1 and 2. There are two listings sorted first by minor area code (subparagraph a) and second by state/country (subparagraph b).



CONUS 48 States/DC = Y

Figure A-E-1. JSC Area Codes (USA)



Note: Antarctica = L  
 Worldwide = U  
 Space = V  
 CONUS 48 states and DC = Y  
 Miscellaneous = X

Figure A-E-2 JSC Area Codes World



**a. This paragraph is sorted by the minor area code.**

CHESAPEAKE BAY	A	SOUTH DAKOTA	D	
CONNECTICUT	A	UTAH	D	
DELAWARE	A	WYOMING	D	
DISTRICT OF COLUMBIA	A			
FIRST NAV DISTRICT	A	ARIZONA	E	
LAKE ONTARIO	A	ARKANSAS	E	
MAINE	A	EIGHTH NAV DIST	E	
MARYLAND	A	LOUISIANA	E	E
MASSACHUSETTS	A	NEW MEXICO	E	
NAV DIST WASH DC	A	OKLAHOMA	E	
NEW YORK	A	SW REGION CAP 6	E	
NEW HAMPSHIRE	A	TEXAS	E	
NEW JERSEY	A			
PENNSYLVANIA	A	CALIFORNIA	F	
RHODE ISLAND	A	NEVADA	F	
THIRD NAV DISTRICT	A	OREGON	F	
VERMONT	A	PAC REGION CAP 8	F	
VIRGINIA	A	WASHINGTON	F	
WEST VIRGINIA	A			
		ALASKA	G	
GREAT LAKES	B	PACIFIC OCEAN NE	G	
ILLINOIS	B			
INDIANA	B	ALASKA ALEUTIAN IS	H	
IOWA	B	BERING SEA	H	
KENTUCKY		FOURTEENTH NAV DIS	H B	
LAKE ERIE	B	HAWAII	H	
LAKE SUPERIOR	B	JOHNSTON ISLAND	H	
LAKE HURON	B	MIDWAY ISLAND		H
LAKE MICHIGAN	B	PACIFIC OCEAN NW	H	
MICHIGAN	B			
MINNESOTA	B	ATLANTIC OCEAN NW	J	
MISSOURI	B	AZORES	J	
OHIO	B	CANADA	J	
WISCONSIN	B	FAEROES ISLANDES	J	
		GREENLAND	J	
ALABAMA	C	HUDSON BAY	J	
FLORIDA	C	ICELAND	J	
GEORGIA	C	JAN MAYEN	J	
MISSISSIPPI	C	S. PIERRE/MIQUELON	J	
NORTH CAROLINA	C			
SIXTH NAV DISTRICT	C	ANGUILLA	K	
SOUTH CAROLINA	C	ANTIGUA/BARBUDA	K	
TENNESSEE	C	ARUBA	K	
		ASCENSION	K	
COLORADO	D	ATLANTIC OCEAN WC	K	
IDAHO	D	BAHAMAS	K	
KANSAS	D	BARBADOS		K
MONTANA	D	BERMUDA	K	
NEBRASKA	D	BRIT WEST INDIES	K	
NORTH DAKOTA	D	CANARIES	K	
RCKY MTN RGN. CAP 7	D	CAPE VERDE ISLAND	K	

CARIBBEAN	K	SOUTH AMERICA	
CAYMAN ISLAND	K	SURINAM REP OF	
CUBA	K	SW ATLANTIC OCEAN	L
DOMINICA	K	URUGUAY REPUBLIC	L
DOMINICAN REPUBLIC	K	VENEZUELA REPUBLIC	L
FALKLAND ISLANDS	K		
FIFTEENTH NAV DIST	K	BALTIC SEA	M
GRENADA	K	FINLAND	M
GUADELOUPE F DEPT	K	NORWAY	M
GULF OF MEXICO	K	NORWEGIAN SEA	M
HAITI REPUBLIC	K	SPITSBERGEN	M
JAMAICA	K	SWEDEN	M
LESSER ANTILLES	K		
MADEIRA	K	AEGEAN SEA	N
MARTINIQUE F DEPT	K	ANDORRA	N
MONTSERRAT	K	ATLANTIC OCEAN NE	N
NETHERLND ANTILLES	K	AUSTRIA	N
PANAMA CANAL ZONE	K	BELGIUM	N
PUERTO RICO	K	BERLIN WEST	N
S. TOME/PRINCIPE	K	CORSICA	N
S. HELENA	K	CRETE	N
SAINT LUCIA	K	CYPRUS REPUBLIC	N
ST CRISTOPH/NEVIS	K	DENMARK	N
ST VINCENT/GRENADIN	K	ENGLISH CHANNEL	N
SWAN ISLAND	K	EUROPE	N
TENTH NAV DISTRICT	K	FRANCE	N
TRINIDAD/TOBAGO	K	GERMANY	N
TRISTAN DA CUNHA	K	GIBRALTAR	N
TURKS/CAICOS IS.	K	GREECE	N
VIRGIN IS BR. (ITU)	K	IRELAND	N
VIRGIN IS US (ITU)	K	ITALY	N
VIRGIN ISLANDS	K	LIECHTENSTEIN	N
		LUXEMBOURG	N
ANTARTICA	L	MALTA	N
ARGENTINE REPUBLIC	L	MEDITERRANEAN SEA	N
BOLIVIA	L	MEDITERRANEAN-EAST	N
BRAZIL		MEDITERRANEAN-WEST	N L
CENTRAL AMERICA	L	MONACO	N
CHILE (EX EASTER I)	L	NATO EUROPE ALL	N
COLUMBIA REPUBLIC	L	NETHERLANDS KINGDM	N
COSTA RICA	L	NORTH SEA	N
ECUADOR	L	PORTUGAL	N
EL SALVADOR REP.	L	SARDINIA	N
GUATEMALA	L	SICILY	N
GUYANA	L	SPAIN	N
GUYANA (FRENCH)	L	SWITZERLAND CONFED	N
HONDURAS REPUBLIC	L	TURKEY	N
LATIN AMERICA	L	UK GREAT BRITAIN	N
MEXICO	L	VATICAN CITY STATE	N
NICARAGUA	L		
PACIFIC OCEAN SE	L	ALBANIA REPUBLIC	O
PANAMA REPUBLIC	L	BOSNIA AND HERZEGOVINA	O
PARAGUAY	L	BULGARIA PEO REPUB	O
PERU	L	CROATIA	O

CZECHOSLOVAKIA	O	SYRIAN ARAB REP.	P
HUNGARIAN REPUBLIC	O	TANZANIA REPUBLIC	P
MACEDONIA	O	TANZANIA (ITU)	P
POLAND PEO REPUBLI	O	TANZANIA (ZANZIBAR)	P
ROUMANIA SOCLT REP	O	TOGOLESE REPUBLIC	P
SERBIA AND MONTENEGRO	O	TUNISIA	P
SLOVAKIA	O	UGANDA	P
SLOVENIA	O	UN TRUCE SUPER JER	P
YOGOSLAVIA	O	ZAIRE	P
		ZAIRE	P
AFRICA	P	ZAMBIA REPUBLIC	P
ALGERIA	P	ZIMBABWE (REP. OF)	P
ANGOLA	P		
ATLANTIC OCEAN SE	P	BYELORUSSIAN SSR	Q
BENIN	P	MONGOLIAN REPUBLIC	Q
BHUTAN (ITU)	P	UKRAINIAN SSR	Q
BOTSWANA	P	USSR	Q
BURKINA FASO	P		
BURUNDI KINGDOM	P	CHINA	R
CAMEROON REPUBLIC	P	HONG KONG	R
CENTRL AFRICAN REP	P	JAPAN	R
CHAD	P	KOREA (PEOPLES REP.)	R
CONGO PEO REPUBLIC	P	KOREA REPUBLIC	R
EQUATORIAL GUINEA	P	MACAO	R
GABON REPUBLIC	P	SOUTH CHINA SEA	R
GAMBIA (BATHURST)	P		
GHANA		AMERICAN SAMOA	S P
GUINEA REPUBLIC	P	ASIA SOUTH	S
GUINES-BISSAU	P	ASIA SOUTHEAST	S
ISRAEL (STATE OF)	P	ASIA	S
IVORY COAST REPUB	P	BANGLADESH	S
LEBANON	P	BHUTAN	S
LESOTHO KINGDOM OF	P	BRUNEI	S
LIBERIA REPUBLIC	P	BURMA (UNION CF)	S
LIBYAN ARAB REPUB	P	CAROLINE ISLANDS	S
MADAGASCAR DEM REP	P	CELEBES SEA	S
MALAWI	P	CHAGOS ARCHIPELAGO	S
MALI REPUBLIC	P	CHRISTMAS I INDO	S
MARION ISLAND	P	CHRISTMAS I (PAC)	S
MAURITANIA (REP. OF)	P	COMORO ISLAND	S
MAYOTTE ISLAND	P	COOK ISLANDS	S
MOROCCO (KINGDOM OF)	P	COOK ISLANDS (NORTH)	S
MOZAMBIQUE	P	EASTER I (CHILE)	S
NIGER (REPUBLIC OF)	P	FIJI ISLANDS	S
NIGERIA (REPUBLIC OF)	P	FRENCH POLYNESIA	S
RODRIGUEZ	P	GUAM	S
RWANDA REPUBLIC	P	HOWLAND ISLAND	S
SAN MARINO (ITU)	P	INDIA REPUBLIC OF	S
SENEGAL REPUBLIC	P	INDONESIA REPUBLIC	S
SIERRA LEONE	P	JAMMU AND KASHMIR	S
SO AFRICA REPUBLIC	P	JARVIS ISLAND	S
SP TER NE MOROCCO	P	KHMER REPUBLIC	S
SPANISH SAHARIAN T	P	KIRIBATI	S
SWAZILAND KINGDOM	P	LAOS KINGDOM	S

MALAYSIA	S	WORLDWIDE	U	
MALDIVES REPUBLIC	S			
MARIANA IS (EX GUM)	S	USP (US AND POSS)	V	
MARSHALL ISLANDS	S			
MICRONESIA FED ST	S	SPACEGEOSTATIONARY	W	
NAURU ISLANDS	S			
NEPAL	S	ALL	X	
NETHLANDS N GU	S	ARABIAN SEA	X	
NEW GUINES TERR	S	ARCTIC OCEAN	X	
NEW CALEDONIA	S	ATLANTIC NORTH	X	
NIUE ISLAND	S	ATLANTIC EAST	X	
OCEANIA	S	ATLANTIC OCEAN	X	
PALAU REPUBLIC OF	S	CANADIAN OCEAN STA	X	
PALMYRA ISLAND	S	CLASSIFIED LOCATIN	X	
PAPUA (TERRITORY OF)	S	COMM SPCE-RUSSIA	X	
PAPUA NEW GUINEA	S	COMM SPCE-USA		
PARACEL ISLANDS	S	COMM SPCE-CANADA	X	
PHILLIPPINES REP.	S	COMM SPCE-RUSSIA	X	
PHOENIX ISLANDS	S	COMM SPCE-FRANCE	X	
PITCAIRN ISLAND	S	COMM SPCE-BELGIUM	X	
PORTUGUESE TIMOR	S	COMM SPCE-RUSSIA	X	
SIKKIM	S	COMM SPCE-USA		
SINGAPORE REPUBLIC	S	COMMON USE (ITU)	X	
SOLOMON ISLANDS	S	ELEVENTH NAV DIST	X	
SRI LANKA (CEYLON)	S	FAR EAST	X	
SW PACIFIC OCEAN	S	FIFTH NAV DISTRICT	X	
SYCHELLES	S	FOURTH NAV DIST	X	
THAILAND	S	GT LKS REGION CAP 3	X	
TOKELAU ISLANDS	S	INTELSAT	X	
TONGA KINGDOM	S	INTELSAT	X	
TRUST TERRITORIES	S	INTELSAT	X	
TUVALU	S	INTELSAT	X	
UN MAG INDIA PAK	S	INTER-SHIP (ITU)	X	
VANUATA (REP. OF)	S	INTERNAT WTRS	X	
VIET-NAM NORTH	S	MID E REGION CAP 2	X	
VIET-NAM SOUTH	S	MISSISSIPPI W OF		X
WAKE ISLAND	S	MISSISSIPPI E OF	X	
WALLIS/FUTANA ISLS	S	N CE REGION CAP 5	X	
WESTERN SAMOA	S	NAMIBIA	X	
		NATO COUNTRIES ALL	X	
ADELIE LAND	T	NE REGION CAP 1	X	
AUSTRALIA COMMWLTH	T	NINTH NAV DIST	X	
COCOS KEELING IS	T	NORTH AMERICA	X	
CROZET ARCHIPELAGO	T	ORBITAL FLIGHT		X
GB INDO TERRITORY	T	PACIFIC OCEAN	X	
INDIAN OCEAN	T	PACIFIC NORTH	X	
KERGUELEN ISLANDS	T	RECEIVE ONLY RECRD	X	
MAURITIUS	T	SE REGION CAP 4		X
NEW ZEALAND	T	SPACE SYSTEM	X	
REUNION (FRENCH)	T	SPCE RES-FRANCE	X	
ST PAUL AMSTERDAM	T	SPCE MET-USA	X	
		SPCE RES-FRANCE	X	
SPACENON-GEOSTTNR	U	SPCE MET-USA	X	
WORLD WIDE AREA	U	SPCE RES-USA	X	

SPCE RES-USA	X		
SPCE RES-USA	X	ADEN	Z
SPCE RES-SWEDEN	X	AFARS/ISSAS (FRENCH)	Z
SPCE RES-CANADA	X	AFGHANISTAN	Z
SPCE RES-JAPAN	X	ASIA SOUTHWEST	Z
SPCE RES-JAPAN	X	BAHRAIN, STATE OF	Z
SPCE RES-GERMANY	X	BELIZE	Z
SPCE RES-GERMANY	X	DJIBOUTI	Z
SPCE RES-FRANCE	X	EGYPT ARAB REPUBLI	Z
SPCE RES-FRANCE	X	ETHIOPIA	Z
SPCE RES-FRANCE	X	IRAN	Z
SPCE MET-FRANCE	X	IRAQ REPUBLIC	Z
SPCE RES-FRANCE	X	JORDAN (KINGDOM OF)	Z
SPCE RES-FRANCE	X	KENYA	Z
SPCE RES-FRANCE	X	KUWAIT (STATE OF)	Z
SPCE MET-RUSSIA	X	MIDDLE EAST	Z
SPCE RADNAV-USA	X	OMAN (MUSCAT/OMAN)	Z
SPCE RES-FR/GERMANY	X	PAKISTAN	Z
SPCE RES-CANADA	X	PERSIAN GULF	Z
THIRTEENTH NAV DIS	X	QATAR	Z
TWELTH NAV DIST	X	RED SEA	Z
UK STA IN REGION 1	X	SAUDI ARABIA KINGD	Z
UK STA IN REGION 2	X	SOMALI DEM REPUBLI	Z
UK STA IN REGION 3	X	SOMALILAND (FRENCH)	Z
US POSSESSIONS ONLY	X	SOMALILAND (BRITISH)	Z
US OCEAN STATION	X	SUDAN REPUBLIC	Z
US (50 STATES-DC)	X	SULTANTATE OF OMAN	Z
WRLD WIDE RESTRICT	X	TRUCIAL STATES	
		UN ARAB EMPIRATES	Z
CONTINENTAL US	Y	YEMEN ARAB REPUBLI	Z
CONUS 48 STATES DC	Y	YEMEN (PEO DEM REP)	Z

**b. This paragraph is sorted by the state/country name.**

ADELIE LAND	T	BHUTAN (ITU)	P
ADEN	Z	BOLIVA	L
AEGEAN SEA	N	BOSNIA AND HERZEGOVINA	O
AFARS/ISSAS (FRENCH)	Z	BOTSWANA	P
AFGHANISTAN	Z	BRAZIL	L
AFRICA		BRIT WEST INDIES	K P
ALABAMA	C	BRUNEI	S
ALASKA	G	BULGARIA PEO REPUB	O
ALASKA ALEUTIAN IS	H	BURKINA FASO	P
ALASKA MAIN LAND	G	BURMA (UNION CF)	S
ALBANIA REPUBLIC	O	BURUNDI KINGDOM	P
ALGERIA	P	BYELORUSSIAN SSR	Q
ALL	X	CALIFORNIA	F
AMERICAN SAMOA	S	CAMEROON REPUBLIC	P
ANDORRA	N	CANADA	J
ANGOLA	P	CANADA EAST COAST	J
ANGUILLA	K	CANADA EASTCENTRAL	J
ANTARTICA	L	CANADA NORTHEAST	J
ANTIGUA/BARBUDA	K	CANADA NORTHWEST	J
ARABIAN SEA	X	CANADA SOUTHWEST	J
ARCTIC OCEAN	X	CANADIAN OCEAN STA	X
ARGENTINE REPUBLIC	L	CANARIES	K
ARIZONA	E	CAPE VERDE ISLAND	K
ARKANSAS	E	CARIBBEAN	K
ARUBA	K	CAROLINE ISLANDS	S
ASCENSION	K	CAYMAN ISLAND	K
ASIA	S	CELEBES SEA	S
ASIA SOUTH	S	CENTRAL AMERICA	L
ASIA SOUTHEAST	S	CENTRL AFRICAN REP	P
ASIA SOUTHWEST	Z	CHAD	P
ATLANTIC EAST	X	CHAGOS ARCHIPELAGO	S
ATLANTIC NORTH	X	CHESAPEAKE BAY	A
ATLANTIC OCEAN SE	P	CHILE (EX EASTER I)	L
ATLANTIC OCEAN	X	CHINA	R
ATLANTIC OCEAN NE	N	CHRISTMAS I (PAC)	S
ATLANTIC OCEAN NW	J	CHRISTMAS I INDO	S
ATLANTIC OCEAN WC	K	CLASSIFIED LOCATIN	X
AUSTRALIA COMMWLTH	T	COCOS KEELING IS	T
AUSTRIA	N	COLORADO	D
AZORES	J	COLUMBIA REPUBLIC	L
BAHAMAS	K	COMM SPCE-BELGIUM	X
BAHRAIN, STATE OF	Z	COMM SPCE-CANADA	X
BALTIC SEA	M	COMM SPCE-FRANCE	X
BANGLADESH	S	COMM SPCE-RUSSIA	X
BARBADOS		COMM SPCE-RUSSIA	X K
BELGIUM	N	COMM SPCE-RUSSIA	X
BELIZE	Z	COMM SPCE-USA	X
BENIN	P	COMM SPCE-USA	X
BERING SEA	H	COMMON USE (ITU)	X
BERLIN WEST	N	COMORO ISLAND	S
BERMUDA	K	CONGO PEO REPUBLIC	P
BHUTAN	S	CONNECTICUT	A

CONTINENTAL US	Y	GUAM	S
CONUS 48 STATES DC	Y	GUATEMALA	L
COOK ISLANDS	S	GUINEA REPUBLIC	P
COOK ISLANDS (NORTH)	S	GUINES-BISSAU	P
CORSICA	N	GULF OF MEXICO	K
COSTA RICA	L	GUYANA	L
CRETE	N	GUYANA (FRENCH)	L
CROATIA	O	HAITI REPUBLIC	K
CROZET ARCHIPELAGO	T	HAWAII	H
CUBA	K	HAWAII (ITU)	H
CYPRUS REPUBLIC	N	HONDORAS REPUBLIC	L
CZECHOSLOVAKIA	O	HONG KONG	R
DELAWARE	A	HOWLAND ISLAND	S
DENMARK	N	HUDSON BAY	J
DISTRICT OF COLUMBIA	A	HUNGARIAN REPUBLIC	O
DJIBOUTI	Z	ICELAND	J
DOMINICA	K	IDAHO	D
DOMINICAN REPUBLIC	K	ILLINOIS	B
EASTER I (CHILE)		INDIA REPUBLIC OF	S S
ECUADOR	L	INDIAN OCEAN	T
EGYPT ARAB REPUBLI	Z	INDIANA	B
EIGHTH NAV DIST	E	INDONESIA REPUBLIC	S
EL SALVADOR REP.	L	INTELSAT	X
ELEVENTH NAV DIST	X	INTELSAT	X
ENGLISH CHANNEL	N	INTELSAT	X
EQUATORIAL GUINEA	P	INTELSAT	X
ETHIOPIA	Z	INTER-SHIP (ITU)	X
EUROPE	N	INTERNAT WTRS	X
FAEROES ISLANDES	J	IOWA	B
FALKLAND ISLANDS	K	IRAN	Z
FAR EAST	X	IRAQ REPUBLIC	Z
FIFTEENTH NAV DIST	K	IRELAND	N
FIFTH NAV DISTRICT	X	ISRAEL (STATE OF)	P
FIJI ISLANDS	S	ITALY	N
FINLAND	M	IVORY COAST REPUB	P
FIRST NAV DISTRICT	A	JAMAICA	K
FLORIDA	C	JAMMU AND KASHMIR	S
FOURTEENTH NAV DIS	H	JAN MAYEN	J
FOURTH NAV DIST	X	JAPAN	R
FRANCE	N	JARVIS ISLAND	S
FRENCH POLYNESIA	S	JOHNSTON ISLAND	H
GABON REPUBLIC	P	JORDAN (KINGDOM OF)	Z
GAMBIA (BATHURST)	P	KANSAS	D
GB INDO TERRITORY	T	KENTUCKY	B
GEORGIA	C	KENYA	Z
GERMANY	N	KERGUELEN ISLANDS	T
GHANA		KHMER REPUBLIC	S P
GIBRALTAR	N	KIRIBATI	S
GREAT LAKES	B	KOREA REPUBLIC	R
GREECE	N	KOREA (PEOPLES REP.)	R
GREENLAND	J	KUWAIT (STATE OF)	Z
GRENADA	K	LAKE ERIE	B
GT LKS REGION CAP 3	X	LAKE HURON	B
GUADELOUPE F DEPT	K	LAKE MICHIGAN	B

LAKE ONTARIO	A	NATO EUROPE ALL	N
LAKE SUPERIOR	B	NAURU ISLANDS	S
LAOS KINGDOM	S	NAV DIST WASH DC	A
LATIN AMERICA	L	NE REGION CAP 1	X
LEBANON	P	NEBRASKA	D
LESOTHO KINGDOM OF	P	NEPAL	S
LESSER ANTILLES	K	NETHERLANDS KINGDM	N
LIBERIA REPUBLIC	P	NETHERLND ANTILLES	K
LIBYAN ARAB REPUB	P	NETHLANDS N GU	S
LIECHTENSTEIN	N	NEVADA	F
LOUISIANA	E	NEW CALEDONIA	S
LUXEMBOURG	N	NEW GUINES TERR	S
MACAO	R	NEW HAMSPHIRE	A
MACEDONIA	O	NEW JERSEY	A
MADAGASCAR DEM REP	P	NEW MEXICO	E
MADEIRA	K	NEW YORK	A
MAINE	A	NEW ZEALAND	T
MALAWI	P	NICARAGUA	L
MALAYSIA	S	NIGER (REPUBLIC OF)	P
MALDIVES REPUBLIC	S	NIGERIA (REPUBLIC OF)	P
MALI REPUBLIC	P	NINTH NAV DIST	X
MALTA	N	NIUE ISLAND	S
MARIANA IS (EX GUM)	S	NORTH AMERICA	X
MARION ISLAND	P	NORTH CAROLINA	C
MARSHALL ISLANDS	S	NORTH DAKOTA	D
MARTINIQUE F DEPT	K	NORTH SEA	N
MARYLAND	A	NORWAY	M
MASSACHUSETTS	A	NORWEGIAN SEA	M
MAURITANIA (REP. OF)	P	OCEANIA	S
MAURITIUS	T	OHIO	B
MAYOTTE ISLAND	P	OKLAHOMA	E
MEDITERRANEAN SEA	N	OMAN (MUSCAT/OMAN)	Z
MEDITERRANEAN-EAST	N	ORBITAL FLIGHT	X
MEDITERRANEAN-WEST	N	OREGON	F
MEXICO	L	PAC REGION CAP 8	F
MICHIGAN	B	PACIFIC NORTH	X
MICRONESIA FED ST	S	PACIFIC OCEAN	X
MID E REGION CAP 2	X	PACIFIC OCEAN NE	G
MIDDLE EAST	Z	PACIFIC OCEAN NW	H
MIDWAY ISLAND		PACIFIC OCEAN SE	L H
MINNESOTA	B	PAKISTAN	Z
MISSISSIPPI	C	PALAU REPUBLIC OF	S
MISSISSIPPI E OF	X	PALMYRA ISLAND	S
MISSISSIPPI W OF		PANAMA CANAL ZONE	K X
MISSOURI	B	PANAMA REPUBLIC	L
MONACO	N	PAPUA NEW GUINEA	S
MONGOLIAN REPUBLIC	Q	PAPUA (TERRITORY OF)	S
MONTANA	D	PARACEL ISLANDS	S
MONTserrat	K	PARAGUAY	L
MOROCCO (KINGDOM OF)	P	PENNSYLVANIA	A
MOZAMBIQUE	P	PERSIAN GULF	Z
N CE REGION CAP 5	X	PERU	L
NAMIBIA	X	PHILLIPPINES REP.	S
NATO COUNTRIES ALL	X	PHOENIX ISLANDS	S



PITCAIRN ISLAND	S	SPCE RES-FR/GERMANY	X
POLAND PEO REPUBLI	O	SPCE RES-FRANCE	X
PORTUGAL	N	SPCE RES-FRANCE	X
PORTUGUESE TIMOR	S	SPCE RES-FRANCE	X
PUERTO RICO	K	SPCE RES-FRANCE	X
QATAR	Z	SPCE RES-FRANCE	X
RCKY MTN RGN. CAP 7	D	SPCE RES-FRANCE	X
RECEIVE ONLY RECRD	X	SPCE RES-FRANCE	X
RED SEA	Z	SPCE RES-FRANCE	X
REUNION (FRENCH)	T	SPCE RES-GERMANY	X
RHODE ISLAND	A	SPCE RES-GERMANY	X
RODRIGUEZ	P	SPCE RES-JAPAN	X
ROUMANIA SOCLT REP	O	SPCE RES-JAPAN	X
RWANDA REPUBLIC	P	SPCE RES-SWEDEN	X
S. HELENA	K	SPCE RES-USA	X
S. PIERRE/MIQUELON	J	SPCE RES-USA	X
S. TOME/PRINCIPE	K	SPCE RES-USA	X
SAINT LUCIA	K	SPITSBERGEN	M
SAN MARINO (ITU)	P	SRI LANKA (CEYLON)	S
SARDINIA	N	ST CRISTOPH/NEVIS	K
SAUDI ARABIA KINGD	Z	ST PAUL AMSTERDAM	T
SE REGION CAP 4		ST VINCENT/GRENADIN	K X
SENEGAL REPUBLIC	P	SUDAN REPUBLIC	Z
SERBIA AND MONTENEGRO	O	SULTANTATE OF OMAN	Z
SYCHELLES	S	SURINAM REP OF	L
SICILY	N	SW ATLANTIC OCEAN	L
SIERRA LEONE	P	SW PACIFIC OCEAN	S
SIKKIM	S	SW REGION CAP 6	E
SINGAPORE REPUBLIC	S	SWAN ISLAND	K
SIXTH NAV DISTRICT	C	SWAZILAND KINGDOM	P
SLOVAKIA	O	SWEDEN	M
SLOVENIA	O	SWITZERLAND CONFED	N
SO AFRICA REPUBLIC	P	SYRIAN ARAB REP.	P
SOLOMON ISLANDS	S	TANZANIA (ITU)	P
SOMALI DEM REPUBLI	Z	TANZANIA REPUBLIC	P
SOMALILAND (BRITISH)	Z	TANZANIA (ZANZIBAR)	P
SOMALILAND (FRENCH)	Z	TENNESSEE	C
SOUTH AMERICA		TENTH NAV DISTRICT	K L
SOUTH CAROLINA	C	TEXAS	E
SOUTH CHINA SEA	R	THAILAND	S
SOUTH DAKOTA	D	THIRD NAV DISTRICT	A
SP TER NE MOROCCO	P	THIRTEENTH NAV DIS	X
SPACE SYSTEM	X	TOGOLESE REPUBLIC	P
SPACEGEOSTATIONARY	W	TOKELAU ISLANDS	S
SPACENON-GEOSTTNR	U	TONGA KINGDOM	S
SPAIN	N	TRINIDAD/TOBAGO	K
SPANISH SAHARIAN T	P	TRISTAN DA CUNHA	K
SPCE MET-FRANCE	X	TRUCIAL STATES	Z
SPCE MET-RUSSIA	X	TRUST TERRITORIES	S
SPCE MET-USA	X	TUNISIA	P
SPCE MET-USA	X	TURKEY	N
SPCE RADNAV-USA	X	TURKS/CAICOS IS.	K
SPCE RES-CANADA	X	TUVALU	S
SPCE RES-CANADA	X	TWELTH NAV DIST	X

UGANDA	P	VIET-NAM SOUTH	S
UK GREAT BRITAIN	N	VIRGIN IS BR. (ITU)	K
UK STA IN REGION 1	X	VIRGIN IS US (ITU)	K
UK STA IN REGION 2	X	VIRGIN ISLANDS	K
UK STA IN REGION 3	X	VIRGINIA	A
UKRAINIAN SSR	Q	WAKE ISLAND	S
UN ARAB EMPIRATES	Z	WALLIS/FUTANA ISLS	S
UN MAG INDIA PAK	S	WASHINGTON	F
UN TRUCE SUPER JER	P	WEST VIRGINIA	A
URUGUAY REPUBLIC	L	WESTERN SAMOA	S
US (50 STATES-DC)	X	WISCONSIN	B
US OCEAN STATION	X	WORLDWIDE	U
US POSSESSIONS ONLY	X	WORLD WIDE AREA	U
USP (US AND POSS)	V	WRLD WIDE RESTRICT	X
USSR	Q	WYOMING	D
UTAH	D	YEMEN ARAB REPUBLI	Z
VANUATA (REP. OF)	S	YEMEN (PEO DEM REP)	Z
VATICAN CITY STATE	N	YOGOSLAVIA	O
VENEZUELA REPUBLIC	L	ZAIRE	P
VERMONT	A	ZAIRE	P
VIET-NAM NORTH	S	ZAMBIA REPUBLIC	P

## ANNEX F – IRAC-APPROVED RECORD NOTES

IRAC Coordination (C), Emission (E), Limitation (L), Priority (P) and Special (S) record notes are used in Data Item 500. IRAC Minute (M) notes are used in Data Item 501.

### Coordination Notes

**C002**--Subject to coordination with the Western Area Frequency Coordinator located at the Navy Pacific Missile Test Center, Pt. Mugu, Cal., prior to use within a 322 kilometer radius of Pt. Mugu or in California south of Latitude 37°30' North.

**C003**--This frequency assignment in one of the bands 1435-1525, 2310-2320 and 2345-2390 MHz was coordinated prior to authorization with the Western Area Frequency Coordinator (WAFC) who also coordinated it, as appropriate, with the Aerospace and Flight Test Radio Coordinating Council. Use of this frequency under the authority of this assignment is subject to such further coordination with the WAFC as necessary to ensure compatibility with existing uses.

**C004**--Subject to coordination with the Eastern Area Frequency Coordinator located at Patrick AFB, Florida, prior to use within the area bounded by 24°N 31°30'N and 77°W 83°W.

**C005**--This frequency assignment in one of the bands 1435-1525, 2310-2320 and 2345-2390 MHz was coordinated prior to authorization with the Eastern Area Frequency Coordinator, Patrick AFB, Florida, who also coordinated it, as appropriate, with Aerospace and Flight Test Radio Coordinating Council. Use of this frequency under the authority of this assignment is subject to such further coordination with the Eastern AFC, Patrick AFB, Florida, as necessary to ensure compatibility with existing uses.

**C006**--Subject to coordination with the Area Frequency Coordinator located at White Sands Missile Range, New Mexico, prior to use in the State of New Mexico or other U.S. territory within a 240 kilometer radius of WSMR plus the area of Utah and Colorado that lies south of 41° North and between 108° and 111° West. Phone: 505-678-5417 or 3702, Autovon: 258-5417 or 3702.

**C007**--This frequency assignment in one of the bands 1435-1525, 2310-2320 and 2345-2390 MHz was coordinated prior to authorization with the Area Frequency Coordinator, WSMR, New Mexico, who also coordinated it, as appropriate, with the Aerospace and Flight Test Radio Coordinating Council. Use of this frequency under the authority of this assignment is subject to such further coordination with the AFC, WSMR, New Mexico, as necessary to ensure compatibility with the existing uses.

**C008**--Subject to Coordination with the Area Frequency Coordinator, State of Arizona, ATTN: SFISFAC- SH, Ft. Huachuca, AZ 85613-5000, Phone: (520) 538-6423; FAX (520) 538-8525; DSN 879-6423.

**C009**--This frequency assignment in one of the bands 1435-1525, 2310-2320 and 2345-2390 MHz was coordinated prior to authorization with the Area Frequency Coordinator, Ft. Huachuca, Arizona, who also coordinated it, as appropriate, with the Aerospace and Flight Test Radio Coordinating Council. Use of this frequency under the authority of this assignment is subject to such further coordination with the AFC, Ft. Huachuca, as necessary to ensure compatibility with existing uses.

**C010**--Subject to coordination with the Gulf Area Frequency Coordinator located at Eglin AFB, Florida, prior to use within the area bounded by 27°N 33°30'N and 83°W 90°W.

**C011**--This frequency assignment in one of the bands 1435-1525, 2310-2320 and 2345-2390 MHz was coordinated prior to authorization with the Gulf Area Frequency Coordinator, Eglin AFB, Florida, who also coordinated it, as appropriate, with the Aerospace and Flight Test Radio Coordinating Council. Use of this frequency under the authority of this assignment is subject to such further coordination with the Gulf AFC, Eglin AFB, Florida, as necessary to ensure compatibility with existing uses.

**C012**--Subject to coordination with the Joint Frequency Management Office located at the Commander- in-Chief, Pacific Headquarters, Camp H. M. Smith, Hawaii, prior to use with the area enclosed by 322 kilometer radius of Honolulu, Hawaii.

**C013**--Subject to local coordination with Frequency Manager, AFFTC, Edwards AFB, California.

**C015**--Subject to prior coordination with Frequency Manager, Air Force Space and Missile Technical Center, Vandenberg AFB, California.

**C016**--This frequency assignment in one of the bands 1435-1525, 2310-2320 and 2345-2390 MHz was coordinated prior to authorization with the HQ USAF Frequency Coordinator, Alexandria, VA., who also

coordinated it, as appropriate, with the Aerospace and Flight Test Radio Coordinating Council. Use of this frequency under the authority of this assignment is subject to such further coordination with the HQ USAF Frequency Coordinator, Alexandria, VA., as necessary to ensure compatibility with existing uses.

**C019**--Subject to prior coordination with Army Frequency Management Office (AFMO) - CONUS, 1214 Stanley Road, Suite 32, Ft. Sam Houston, Texas 78234-5032. Phone: 210-221-2050/2820, (DSN 471).

**C022**--Subject to prior coordination with Frequency Manager, Army Missile Command, Huntsville, Alabama.

**C024**--This frequency assignment in one of the bands 1435-1525, 2310-2320 and 2345-2390 MHz was coordinated prior to its authorization with AFMO CONUS, Ft. Sam Houston, Texas, who also coordinated it, as appropriate, with the Aerospace and Flight Test Radio Coordinating Council. Use of this frequency under the authority of this assignment is subject to such further coordination with AFMO CONUS, Ft. Sam Houston, Texas, as necessary to ensure compatibility with existing uses.

**C026**--Subject to prior coordination with DOE Frequency Coordinator for Albuquerque Operations Office. Phone 575-3458, FTS, or (702) 295-3458, Commercial, or 575-3343, FTS, (702) 295-3343, Commercial (weekends, holidays, and off-duty hours).

**C027**--Subject to prior coordination with DOE Area Frequency Coordinator, Las Vegas, Nevada, when used within the State of Nevada or within a 160 kilometer radius of Mercury or Tonopah, Nevada. Phone 575-3458 or 1162 FTS, 702-295-3458 or 1162 Commercial, and 575-3343 FTS or, 702-295-3343 Commercial (weekends, holidays, and off-duty hours).

**C028**--Subject to prior coordination with DOE Frequency Coordinator for Albuquerque Operations Office when used in a 160 kilometer radius of Albuquerque, New Mexico. Phone 575-3458, FTS, or (702) 295-3458, Commercial, and 575-3343, FTS, (702) 295-3343, Commercial (weekends, holidays, and off-duty hours).

**C030**--The Department of Commerce is designated as control for Government use of this frequency. Use under this assignment is subject to initial coordination with, and subsequent coordination as indicated by, Radio Frequency Coordinator S.I.G. Research Facilities Center, NOAA, Department of Commerce, P. O. Box 520197, Miami, Florida 33152. Phone 305-526-2936 (FTS 350-2936).

**C031**--Subject to prior coordination with FAA Eastern Regional Office, JFK International Airport, New York 11430, Attn: Frequency Management Office. Phone 718-712-8343.

**C032**--Subject to prior coordination with FAA Southern Regional Office, P. O. Box 20636, Atlanta, Georgia 30344, Attn: Frequency Management Office. Phone 404-763-7385/6.

**C033**--Subject to prior coordination with FAA Central Regional Office, 601 East 12th Street, Kansas City, Missouri 64106, Attn: Frequency Management Office. Phone 816-426-5647.

**C034**--Subject to prior coordination with FAA Southwest Regional Office, 4400 Blue Mound, Fort Worth, Texas 76193-0483, Attn: Frequency Management Office. Phone 817-740-3237.

**C035**--Subject to prior coordination with FAA Western Regional Office, P.O. Box 92007, Worldway Center, Los Angeles, California 90009, Attn: Frequency Management Office. Phone 310-297-1872.

**C036**--Subject to prior coordination with FAA Alaskan Regional Office, 222 West 7th Ave., Anchorage, Alaska 99513. Phone 907-243-7246 or 4399.

**C037**--Subject to prior coordination with FAA Western Pacific Regional Office, Honolulu ARTCC, P.O. Box 50109, Honolulu, Hawaii 96850-4983 Attn: Frequency Management Office. Phone 808-541- 1241.

**C038**--Subject to prior coordination with FAA New England Regional Office, 12 New England Executive Park, Burlington, Massachusetts 01803. Phone 617-273-7177.

**C039**--Subject to prior coordination with FAA Great Lakes Regional Office, 2300 East Devon Avenue, Des Plaines, Illinois 60018. Phone 312-694-7071.

**C041**--Subject to prior coordination with FAA Northwest Regional Office, 1601 Lind Avenue, S.W., Renton, Washington 98055-4056. Phone 206-227-2464.

**C042**--This frequency assignment on 1030 MHz or in one of the bands 1215-1400, 2700-2900 or 9000-9200 MHz was coordinated prior to authorization with the FAA Northwest Coordinator, Seattle, Washington. Use of this frequency or band under the authority of this assignment is subject to such further coordination with the FAA Northwest Coordinator, Seattle, Washington, as necessary to ensure compatibility with existing uses. This Note applied to an Aeronautical Assignment Group (AAG) frequency (see Section 1.4.1 of the NTIA Manual) indicates FAA Northwest regional coordination has been accomplished.

**C043**--This frequency assignment on 1030 MHz or in one of the bands 1215-1400, 2700-2900 or 9000-9200 MHz was coordinated prior to authorization with the FAA Western Coordinator, Los Angeles, California. Use of the frequency or band under the authority of this assignment is subject to such further coordination with the FAA Western Coordinator, Los Angeles, California, as necessary to ensure compatibility with existing uses. This Note applied to an Aeronautical Assignment Group (AAG) frequency (see Section 1.4.1 of the NTIA Manual) indicates FAA Western regional coordination has been accomplished.

**C045**--This frequency assignment on 1030 MHz or in one of the bands 1215-1400, 2700-2900 or 9000-9200

MHz was coordinated prior to authorization with the FAA Central Coordinator, Kansas City, Missouri. Use of this frequency or band under the authority of this assignment is subject to such further coordination with the FAA Central Coordinator, Kansas City, Missouri, as necessary to ensure compatibility with existing uses. This Note applied to an Aeronautical Assignment Group (AAG) frequency (see Section 1.4.1 of the NTIA Manual) indicates FAA Central regional coordination has been accomplished.

**C046**--This frequency assignment on 1030 MHz or in one of the bands 1215-1400, 2700-2900 or 9000-9200 MHz was coordinated prior to authorization with the FAA Southwest Coordinator, Ft. Worth, Texas. Use of this frequency or band under the authority of this assignment is subject to such further coordination with the FAA Southwest Coordinator, Ft. Worth, Texas, as necessary to ensure compatibility with existing uses. This Note applied to an Aeronautical Assignment Group (AAG) frequency (see Section 1.4.1 of the NTIA Manual) indicates FAA Southwest regional coordination has been accomplished.

**C047**--This frequency assignment on 1030 MHz or in one of the bands 1215-1400, 2700-2900 or 9000-9200 MHz was coordinated prior to authorization with the FAA Great Lakes Coordinator, Des Plaines, Illinois. Use of the frequency or band under the authority of this assignment is subject to such further coordination with the FAA Great Lakes Coordinator, Des Plaines, Illinois, as necessary to ensure compatibility with existing uses. This Note applied to an Aeronautical Assignment Group (AAG) frequency (see Section 1.4.1 of the NTIA Manual) indicates FAA Great Lakes regional coordination has been accomplished.

**C048**--This frequency assignment on 1030 MHz or in one of the bands 1215-1400, 2700-2900 or 9000-9200 MHz was coordinated prior to authorization with the FAA Southern Coordinator, Atlanta, Georgia. Use of the frequency or band under the authority of this assignment is subject to such further coordination with the FAA Southern Coordinator, Atlanta, Georgia, as necessary to ensure compatibility with existing uses. This Note applied to an Aeronautical Assignment Group (AAG) frequency (see Section 1.4.1 of the NTIA Manual) indicates FAA Southern regional coordination has been accomplished.

**C049**--This frequency assignment on 1030 MHz or in one of the bands 1215-1400, 2700-2900 or 9000-9200 MHz was coordinated prior to authorization with the FAA Eastern Coordinator, New York, New York. Use of the frequency or band under the authority of this assignment is subject to such further coordination with the FAA Eastern Coordinator, New York, New York, as necessary to ensure compatibility with existing uses. This Note applied to an Aeronautical Assignment Group (AAG) frequency (see Section 1.4.1 of the NTIA Manual) indicates FAA Eastern regional coordination has been accomplished.

**C050**--This frequency assignment on 1030 MHz or in one of the bands 1215-1400, 2700-2900 or 9000-9200 MHz was coordinated prior to authorization with the FAA New England Coordinator, Burlington, Massachusetts. Use of the frequency or band under the authority of this assignment is subject to such further coordination with the FAA New England Coordinator, Burlington, Massachusetts, as necessary to ensure compatibility with existing uses. This Note applied to an Aeronautical Assignment Group (AAG) frequency (see Section 1.4.1 of the NTIA Manual) indicates FAA New England regional coordination has been accomplished.

**C052**--Subject to local coordination with FCC Engineer-in-Charge to avoid interference to non-Government services.

**C057**--Subject to prior coordination with NASA Spectrum Manager, Johnson Space Center, Houston, Texas. Telephone: (FTS) 525-0122 or (commercial) 713-483-0122.

**C060**--Prior to operational use, this frequency assignment must be coordinated with and concurred by the commander of the military installation listed.

**C061**--Operational use of this frequency assignment has been coordinated with and concurred by the commander of the military installation listed.

**C062**--DOE use of this frequency for telemetering is subject to prior coordination at the national level with agencies having assignments in the same band and will be subject, at the time of such coordination, to adjustment to preclude harmful interference.

**C064**--All transmissions to NASA's ATS-1 through 5 Satellites shall be coordinated and scheduled with the ATS Project Manager or the ATS Experiments Manager, ATS 1/5, Lewis Research Center, Cleveland, Ohio 44135. Telephone: (216) 433-3483 or 433-3570.

**C065**--Subject to coordination, prior to use, with the Department of the Interior, Bureau of Land Management, National Interagency Fire Center, Boise, Idaho. Telephone: (208) 387-5644.

**C067**--Subject to coordination with the Area Frequency Coordinator located at Nellis AFB, Nevada, prior to use in the states of Nevada, Utah west of 111°W and Idaho south of 44°N.

**C068**--This frequency assignment in one of the bands 1435-1525, 2310-2320 and 2345-2390 MHz was coordinated prior to authorization with the Area Frequency Coordinator, Nellis AFB, Nevada, who also coordinated it, as appropriate, with the Aerospace and Flight Test Radio Coordinating Council. Use of this frequency under the authority of this assignment is subject to such further coordination with the AFC as necessary to ensure compatibility with existing uses.

**C069**--Subject to coordination and scheduling with Mr. Dane Clark; National Environmental Satellite, Data, and Information Service (NESDIS); U.S. Department of Commerce; Direct Services Division (E/SP3); Room 3340 FB4 NOAA; 5200 Auth Road, Suitland, MD 20746-4304; Telephone: (301) 457- 5681.

**C071**--This frequency assignment on 1030 MHz or in one of the bands 1215-1400, 2700-2900 or 9000-9200 MHz was coordinated prior to authorization with the FAA Alaskan Coordinator, Anchorage, Alaska. Use of the frequency or band under the authority of this assignment is subject to such further coordination with the FAA Alaskan Coordinator, Anchorage, Alaska, as necessary to ensure compatibility with existing uses. This Note applied to an Aeronautical Assignment Group (AAG) frequency (see Section 1.4.1 of the NTIA Manual) indicates FAA Alaskan regional coordination has been accomplished.

**C072**--This frequency assignment on 1030 MHz or in one of the bands 1215-1400, 2700-2900 or 9000-9200 MHz was coordinated prior to authorization with the FAA Pacific Coordinator, Honolulu, Hawaii. Use of the frequency or band under the authority of this assignment is subject to such further coordination with the FAA Pacific Coordinator, Honolulu, Hawaii, as necessary to ensure compatibility with existing uses. This Note applied to an Aeronautical Assignment Group (AAG) frequency (see Section 1.4.1 of the NTIA Manual) indicates FAA Pacific regional coordination has been accomplished.

**C073**--Subject to prior coordination with NASA Spectrum Manager, Wallops Flight Center, Wallops Island, Virginia. Telephone: (FTS) 8-889-1278 or commercial 804-824-1278.

**C074**--Operational activities should be coordinated with NASA Spectrum Manager responsible for JPL/Goldstone Programs. Mail: 4800 Oak Grove Drive, Mail Stop 303-404, Pasadena, CA 91109. Telephone: (FTS) 8-792-0068 or (commercial) 818-354-0068.

**C075**--This assignment has been coordinated with the Hydrology Committee in accordance with Section 8.3.6.

**C076**--This assignment has been coordinated with the Radio Spectrum Manager, National Science Foundation, 1800 G St., N.W., Washington, D.C. 20550. Telephone: (202) 357-9696 in accordance with Section 8.3.7, for the band 1660-1670 MHz, or Section 8.3.19.

**C078**--The domestic fixed aspects of this assignment have been coordinated with NTIA in accordance with Section 8.2.11 of the NTIA manual.

**C080**--Subject to prior coordination with the Department of the Interior, U.S. Geological Survey, Earthquakes Hazards Team, Seismology Section, Menlo Park, CA, Communications Coordinator, (415) 329-4780 or 4727, and subject to adjustment in the event of interference to Interior operations within the same splinter channel (Section 4.3.7).

**C081**--This assignment is for a station in the National Radio Quiet Zone. Successful coordination has been effected in accordance with Section 8.3.9 of the NTIA Manual.

**C085**--Subject to prior coordination with Army Frequency Coordinator, Military District of Washington, ATTN: ASNK-OPB, Fort Lesley J. McNair, Washington, D.C. 20319-5050. Phone 202-475-2554 or 2486, Autovon 335-2554 or 2486.

**C086**--This frequency assignment in one of the bands 1435-1525, 2310-2320 and 2345-2390 MHz was coordinated prior to authorization with the Mid-Atlantic Area Frequency Coordinator, Patuxent River, Maryland, who also coordinated it, as appropriate, with the Aerospace and Flight Test Radio Coordinating Council. Use of this frequency under the authority of this assignment is subject to such further coordination with the AFC as necessary to ensure compatibility with existing uses.

**C088**--Prior to use, this frequency assignment must be scheduled with the Post Frequency Manager, Aberdeen Proving Ground, MD. Telephone: 410-278-7591; DSN 298-7591.

**C089**--This frequency assignment was coordinated prior to authorization with FAA Headquarters, 800 Independence Avenue, S.W., Washington, D.C. 20591. Phone: 202-267-8699.

**C090**--In the band 162 to 174 MHz, subject to coordination with adjacent channel users (bandwidth equal to or greater than 12.5 kHz) prior to establishing a station on an interstitial channel under S322 procedures. This note is automatically deleted on January 1, 2005.

**C092**--In the band 406.1 to 420 MHz, subject to coordination with adjacent channel users (bandwidth equal to or greater than 12.5 kHz) prior to establishing a station on an interstitial channel under S322 procedures. This note is automatically deleted on January 1, 2008.

**C093**--Subject to coordination with the Area Frequency Coordinator located at the Atlantic Fleet Weapons Training Facility, Roosevelt Roads, Puerto Rico, prior to use within the area 370 kilometers of Headquarters Building, Atlantic Fleet Weapons Training Facility, Roosevelt Roads, Puerto Rico.

**C094**--Subject to coordination with the Area Frequency Coordinator located at the Naval Air Warfare Center Aircraft Division, Patuxent River, Maryland, prior to use within the area enclosed by 100 kilometer radius of Headquarters Building, Naval Air Warfare Center Aircraft Division, Patuxent River, Maryland.

**C095**--The non-military agency allotted primary use of this frequency, or which shares primary allotment status with AGA, has agreed neither Record Notes PO74 nor P076 are required for this assignment.

## Emission Notes

**E013**--A3 emission authorized for secondary and intermittent operation.

**E023**--Voice transmission is authorized for test and maintenance only.

**E028**--Lower sideband transmission. The carrier is higher than the assigned frequency shown by one half of the indicated bandwidth.<sup>1</sup>

**E029**--Upper sideband transmission. The carrier is lower than the assigned frequency shown by one half of the indicated bandwidth.<sup>1</sup>

**E030**--Lower sideband greater. The suppressed carrier is higher than the assigned frequency shown by 1.5 kHz.<sup>2</sup>

**E031**--Upper sideband greater. The suppressed carrier is lower than the assigned frequency shown by 1.5 kHz.<sup>2</sup>

**E032**--Lower sideband greater. The suppressed carrier is higher than the assigned frequency shown by .5 kHz.<sup>2</sup>

**E033**--Upper sideband greater. The suppressed carrier is lower than the assigned frequency shown by .5 kHz.<sup>2</sup>

**E035**--Lower sideband transmission.<sup>1</sup>

**E036**--Upper sideband transmission.<sup>1</sup>

**E037**--Full-carrier SSB emission (3KH3E) shall be used except (1) when it is known that the receiving station is capable of receiving suppressed-carrier emission (3KJ3E) and (2) upon request of any station using the same carrier frequency (Ref: FCC 87.67b).

**E038**--When a single sideband emission is used from the various emissions shown on this HF assignment, the carrier frequency will be set to place the center of intelligence at the assigned frequency.

**E039**--The authorized emission bandwidth shall be so located within the band that it does not extend beyond the upper or lower limits of the authorized band shown in the \*FRB entry of circuit remarks. If a portion(s) of the authorized band is to be excluded (\*FBE) the authorized emission bandwidth must not extend into any portion(s) of the excluded band(s).

## Limitation Notes

**L002**--Restricted to (daytime, nighttime, or indicated hours of operation.) Wherever used herein the term daytime means from two hours after local sunrise until two hours before local sunset. The term nighttime only means from two hours prior to local sunset until two hours after local sunrise at (a) specified point(s). Local time at transmitter is applicable unless otherwise specified.

**L003**--For communication with \_\_\_\_\_ stations only.

**L012**--To be used only in an emergency jeopardizing life, public safety, or important property under conditions calling for immediate communication where other means of communication do not exist or are temporarily disrupted or inadequate. To insure that radio equipment for emergency use is maintained in satisfactory operating condition, testing on such frequencies is permitted, provided that insofar as practicable, transmitters shall be tested with a non-radiating load and the test use of a radiating antenna held to a minimum and provided further that such testing shall be restricted to test message traffic and shall not include operator training.

**L109**--Restricted to non-air carrier operations normally unavailable to military aircraft.

**L113**--L012 FX

**L116**--L2 daytime

**L121**--L2 daytime Hawaii and westward

**L125**--L2 local sunrise to local sunset

**L127**--L2 local sunset to local sunrise<sup>1</sup>. Applies to SSB transmission

**L131**--L2 nighttime

**L168**--L3 GCA or approach control

**L171**--L3 Agriculture

**L174**--L3 Army

**L177**--L3 Federal Aviation Administration

**L180**--L3 Coast Guard

**L182**--L3 Interior

**L187**--L3 Military

**L188**--L3 Military aircraft or aircraft authorized for military use

**L190**--L3 Navy

**L192**--L3 non-Government

**L193**--L3 non-Government aircraft

**L195**--L3 non-Government coast stations

**L197**--L3 non-Government public correspondence  
**L199**--L3 non-Government ships  
**L201**--L3 public correspondence  
**L203**--L3 U.S. Army Engineers  
**L207**--L3 civil aircraft  
**L242**--L2 1300-2300 GMT  
**L255**--L2 0200-0730 GMT  
**L256**--L2 0200-0800 GMT and 1800-2300 GMT  
**L257**--L2 0600-2100 GMT  
**L278**--L2 0200-1100 GMT  
**L282**--This assignment is for "back-up" use only when regular channels are either temporarily disrupted or inadequate.  
**L283**--Limited to communications in or near a port, or in locks or waterways, between coast stations and ship stations, or between ship stations, in which messages are restricted to those related to the operational handling, the movement and the safety of ships, and, in emergency, to the safety of persons. Messages which are of a public correspondence nature shall be excluded.  
**L294**--L2 1400-2200 GMT  
**L298**--Limited to communications with CAP radio stations when engaged in training or on an actual CAP mission in support of USAF.  
**L304**--L2 1500-0800 GMT April through September; 1800-0500 GMT October through March  
**L308**--L3 Commerce  
**L309**--L012 FB  
**L318**--Authority under this assignment is limited to temporary periods and locations for telemetry of seismic data.  
**L330**--This assignment is limited to communications with non-Government ships for the exchange of traffic dealing with safety of life or property when other means of communication are not practicable.  
**L331**--L2 0900-1300 and 1400-1600 GMT  
**L332**--L2 2200-0300 GMT  
**L334**--L2 0330-1830 GMT  
**L336**--L2 1000-1700 GMT  
**L339**--L2 1200-0300 GMT  
**L341**--Limited to operations conducted in accordance with Bridge-to-Bridge portion of Section 8.2.29 of the NTIA Manual.  
**L343**--L3 Tennessee Valley Authority  
**L347**--L2 2330-2230 GMT  
**L350**--Limited to use from November 15 to April 1.  
**L351**--L2 2000-1000 GMT  
**L353**--L2 0100-0600 Local  
**L355**--Limited to ground transmissions only.  
**L356**--Mobile transmissions allowed only in accordance with Section 7.5.5 of the NTIA Manual.  
**L357**--This band assignment is authorized only for air/ground frequency assignment in the AAG/ MAG bands (118-137 MHz and those frequencies utilized by the FAA for air traffic control in the 225- 328.6 and 335.4-400 MHz band) and is for "back-up" use only when regular channels are either temporarily disrupted or inadequate. Actual frequencies will be listed in Agency Remarks.  
**L358**--L2 1300-2200 GMT

## Minute Notes

**M001**--A note concerning this assignment is recorded in the minutes of the FAS meeting at which the application was approved. The source of the note is identified in the CIRCUIT REMARKS field (\*NTS).  
**M002**--This assignment was coordinated with IRAC or NTIA, and/or is subject to the conditions stated in the letter, the IRAC Document, the FAS Docket, or the FCC Regulation referenced in the CIRCUIT REMARKS field (\*NTS).  
**M003**--Subject to coordination prior to activation and, as appropriate, possible scheduling with the activity(ies) or station(s) listed in the CIRCUIT REMARKS field (\*NTS).  
**M004**--Subject to coordination prior to activation and, as appropriate, possible scheduling with the activity(ies) listed in the CIRCUIT REMARKS field (\*NTS) when used within interference range of such activity(ies) or station(s).



**M006**--Subject to coordination prior to activation with the National Weather Service Meteorologist- In-Charge at the location(s) listed in the CIRCUIT REMARKS field (\*NTS).

**M007**--Subject to notification of activation to the agency or activity listed in the CIRCUIT REMARKS field (\*NTS).

**M008**--Operations under the authority of this assignment are subject to immediate adjustment, including cessation, if they result in harmful interference to the operations listed in the CIRCUIT REMARKS field (\*NTS).

**M009**--Operations under the authority of this assignment a) are on a noninterference basis to the operations of the agency listed in the CIRCUIT REMARKS field (\*NTS) on the same or adjacent channel and b) no protection can be afforded by that agency.

**M010**--This assignment was agreed to on a nonrenewable basis by the agency identified in the CIRCUIT REMARKS field (\*NTS).

**M011**--Limited to the non-broadcast hours of and subject to coordination prior to activation with the station(s) listed in the CIRCUIT REMARKS field (\*NTS).

**M013**--Subject to prior coordination with and concurrence by the organization/official listed in the CIRCUIT REMARKS field (\*NTS) and to temporary cessation when required for marine environmental operations.

**M014**--During transmission, aircraft shall not exceed the altitude listed in the CIRCUIT REMARKS field (\*NTS).

**M015**--The system using this assignment was reviewed by the SPS in accordance with Chapter 10 and the assignment is being made subject to conditions stated in the IRAC and SPS documents referenced in the CIRCUIT REMARKS field (\*NTS).

**M016**--This assignment, made pursuant to Resolution 8 of the GWARC-79, is for planning purposes and is not an authority to operate. Operations may commence after satisfactory replacement action has been completed for (FAS DKT number(s)--optional: freq, agency serial number), and/or after (XXYY) (Date agreed to by displaced agency).

**M017**--This non-Government space station assignment is made with the understanding that protection cannot be guaranteed to reception of the non-Government earth station(s) identified in the CIRCUIT REMARKS field (\*NTS) due to the operation of existing transmitting earth stations and/or Government fixed stations.

## **Priority Notes**

**P032**--Noninterference basis

**P074**--Not to preclude expansion and adjustment of operations within the band 162.0 to 174.0 MHz by non-military Government agencies.

**P076**--Not to preclude expansion and adjustment of operations within the band 406.1 to 420.0 MHz by non-military Government agencies.

## **Special Notes**

**S012**--This operation does not include operator qualification training, but is a periodic operation of a communications system manned by fully qualified operators who are military reservists or affiliates. Except in emergencies, this frequency assignment will not be used as a means for passing traffic that in the absence of this authorization would require delivery by other means.

**S015**--Remote control

**S017**--This assignment is for the training of personnel in the technique and operational aspects of the electronic equipment.

**S032**--Common simplex channel for emergency and distress communications only. Available to all stations operating in or with aeronautical services.

**S034**--Disaster communications

**S035**--Distress, safety and calling

**S038**--FAC operation simultaneous with RLL

**S041**--For calibrating direction finders

**S043**--For emergency use at scene of air sea rescue

**S047**--For transmission of hydrologic and meteorological data

**S048**--For transmission of hydrologic data

**S059**--Radio direction finding

**S063**--Search and rescue communications

**S067**--Subject to Department to the Interior, Bureau of Indian Affairs net control

**S068**--Subject to immediate shutdown as needs of service may dictate

**S070**--Subject to immediate cancellation upon notice from FCC

**S085**--Training and testing operations

**S120**--Intermittent equipment tests

**S121**--This assignment in the band 138-150.8 MHz is not in compliance with section 5.3.5.2 of the NTIA Manual. Nevertheless, it is on an equal basis with assignments that are in compliance with section 5.3.5.2 of the NTIA Manual.

**S139**--Transmissions on this frequency will be discontinued upon receipt of notification to the effect that harmful interference is being caused to the international broadcasting service.

**S141**--This U.S. Government record is outside of the US&P and therefore does not fall within the jurisdiction of the NTIA and IRAC/FAS. This record is incorporated into the Government Master File for spectrum management, analysis and information purposes and does not constitute NTIA authority to transmit.

**S142**--Drone Control

**S144**--This assignment is not in complete conformity with the National Table of Frequency Allocations. Those operations that are conducted under the non-conforming portions of this assignment are on a secondary basis to operations conducted under assignments that are in conformity with the National Table of Frequency Allocations.

**S145**--This frequency is subject to adjustment upon notice from the Military.

**S147**--These frequencies are used for a very short time only during actual nuclear test or dry runs prior to actual test. Such use of frequencies will be on a secondary basis subject to the avoidance of harmful interference to all operations established in accordance with international allocations applicable to these frequencies and to all other operations regularly authorized within the United States and Possessions on specific frequencies within these bands.

**S148**--This is an assignment for domestic service use in providing instantaneous transmission of vital emergency, operational command and alerting traffic of such importance as to affect the immediate survival and defense of the Nation. Circuits utilizing this frequency will be maintained in an operational status at all times, with on-the-air test transmissions to insure the highest degree of readiness. This assignment requires protection commensurate with the importance of the communications for which the circuit is intended.

**S149**--Any use of this assignment that is not at a transient location or that is for a period exceeding 15 days shall be notified to the FAS.

**S150**--This assignment is for a frequency that has been allotted for the primary use of another agency or for all government agencies (AGA); or, the emission bandwidth overlaps a frequency or frequencies allotted for primary use by another agency or all government agencies (AGA). If the frequency is allotted to another agency, the operations on this frequency must be moved to a properly allotted frequency, unless the agency to which the frequency is allotted agrees to the continued use of their allotted frequency. If the frequency is allotted for AGA and there are available frequencies allotted to the agency for its primary use, this operation should be moved to a frequency allotted primarily to the agency. The transition from this frequency in the 406.1 - 420 MHz band is in accordance with the provisions outlined in section 4.3.9 of the NTIA Manual.

**S151**--This assignment must be narrowbanded in accordance with either section 4.3.7a, 4.3.9, or 5.3.5.2 of the NTIA Manual.

**S154**--Scene of disaster frequency

**S155**--For interception and retransmission of television signals

**S157**--Non-Government service

**S159**--U. S. Government short-distance low-power service

**S160**--This assignment has been made pursuant to Part 7.12 of the NTIA Manual and has been coordinated in accordance with Section 8.3.3.

**S164**--This assignment is not in complete conformity with the National Table of Frequency Allocations. Nevertheless, in the national interest, it is on an equal basis with assignments that are in conformity with the National Table of Frequency Allocations.

**S165**--This assignment has been made pursuant to Section 7.5.2 of the NTIA Manual for communication with non-Government stations in the maritime mobile service.

**S170**--Authorized additionally in tactical and training operations when employing single sideband equipment with 3KH3E, 4KJ7B, 4KJ9W emissions for use with peak envelope powers not to exceed 2000 watts. In such operations the following additional conditions are applicable. All necessary emissions under the several modes of operation, including reduced carriers, shall be within  $\pm 3$  kHz of the listed frequency. If harmful interference is caused to authorized operations, the power of this operation will be reduced to the mean power shown for this listing. In the determination of particular listed frequencies and associated carrier frequencies to meet individual tactical needs, due consideration will be given, particularly when utilizing powers in excess of the powers normally authorized on this frequency, to the avoidance of harmful interference to radio services authorized on the same or adjacent frequencies. With respect to the conduct of peacetime training operations, such use of the frequency is on a non-interference basis to the authorized operations of other agencies.

**S171**--Authorized additionally in tactical and training operations when employing single sideband equipment with 3KH3E, 4KJ7B, 4KJ9W emissions for use with peak envelope powers not to exceed 400 watts. In such operations the following additional conditions are applicable. All necessary emissions under the several modes of operation, including reduced carriers, shall be within kHz of the listed frequency. If harmful interference is caused to authorized operations, the power of this operation will be reduced to the mean power shown for this listing. In the determination of particular listed frequencies and associated carrier frequencies to meet individual tactical needs, due consideration will be given, particularly when utilizing powers in excess of the powers normally authorized on this frequency, to the avoidance of harmful interference to radio services authorized on the same or adjacent frequencies. With respect to the conduct of peacetime training operations, such use of the frequency is on a non-interference basis to the authorized operations of other agencies.

**S179**--Power shown is for emergencies only. Normal power is 4 kW or less.

**S181**--This assignment was authorized pursuant to Public Law 87-795.

**S185**--Secondary service. Maximum number of transmitters authorized: 10

**S186**--Power shown is for intermittent or emergency use. Normal power is 20 kW.

**S189**--Tactical and/or training operations

**S195**--Safety Communications.

**S196**--This assignment is for range safety (command destruct/flight termination) in the band 406.1- 420 MHz and is authorized in accordance with Section 8.2.54 of the NTIA Manual with an expiration date not to exceed December 31, 2006.

**S197**--This assignment is for range safety (command destruct/flight termination) in the band 420-450 MHz and is authorized in accordance with Section 8.2.54 of the NTIA Manual.

**S199**--Navy operations authorized by assignments bearing this note shall not cause harmful interference to those non-Government operations existing at the time of authorization. The Navy agrees to make such adjustments of its group of high frequency coast telegraph assignments bearing this note as may be necessary to accommodate necessary expansion or adjustment of the non-Government coast telegraph service.

**S200**--JCS communication circuit

**S205**--Civil defense network

**S206**--This assignment is for an operation for which other telecommunication facilities do not exist, are inadequate, or are impracticable of installation, and for which the use of frequencies above 30 MHz is not practicable. This note applies to FX or AX station classes only.

**S208**--This assignment is for the domestic haul of overseas traffic in transit or destined for the United States, for an operation where technical and operational requirements dictate such use. The domestic radio haul is a segment of the overall overseas radio system.

**S211**--50 kW mean power used during emergency or unusually poor propagation conditions. 10 kW mean power used during normal conditions. 2.5 kW mean power used during unusually good propagation conditions.

**S219**--Power shown is for emergency use. Normal power is 3 kW.

**S227**--Power shown is for emergency use. Normal power is 1.5 kW.

**S233**--This assignment is part of a frequency pool, and, with Department of State approval, it may be used by foreign embassies that are authorized the use of other frequency assignments under Public Law 87-795.

**S242**--The NASA Unified S-band system operates in the 2270-2290 MHz portion of the 2200-2290 MHz space telemetering band on a shared basis. This system will be utilized in space missions of extended duration. In certain geographical areas agencies conducting telemetering operations on the 3  $\pm$  shared frequencies in the 2270-2290 MHz band may be requested by NASA to adjust such operations as necessary to support the space mission involved.

**S264**--This assignment will not be used except in the event that full-scale atmospheric nuclear testing is resumed, and it is further subject to prior coordination with CINCPAC.

**S265**--Transmissions shall be directed so as to avoid harmful interference to FAA stations in the Edwards AFB area.

**S267**--Required for use in emergency areas when required to make initial contact with RACES units. Also for communications with RACES stations on matters requiring coordination.

**S279**--This listing represents a use of a laser(s) for telecommunication purposes and it is entered in the Government Master File (GMF) for information.

**S286**--The Coast Guard agrees to make such adjustments in its coast telegraph operations as necessary to provide an accommodation for non-Government coast radiotelegraph operations anticipated by the designation of this frequency in Part 81, FCC Rules.

**S288**--This frequency assignment is to support the National Command Authority. Circuits utilizing this frequency will be maintained in operational status at all times.

**S291**--Operations are subject to compliance with FCC Rules and Regulations Part 87, subpart c. Advisory service shall be given to any private aircraft upon request. The use of this frequency shall not be a deterrent to the

establishment of a non-Government advisory station in this area. Operations on this frequency shall cease upon the establishment of non-Government facilities or upon notice of harmful interference thereto.

**S292**--Not to be a bar to complete operational implementation of common system aids to Air Navigation.

**S296**--Not to preclude assignment of this frequency to other agencies at specific locations.

**S297**--This assignment is part of the Wide-area Multi-user Land Mobile Justice Wireless Network certified by NTIA in IRAC Doc. 31594. The provisions of paragraphs 3 through 5 of Section 8.2.48A of the NTIA Manual, except for the provisions of Paragraph 3 of that Section that require each agency to conduct requirements analysis of need and to conduct an analysis of alternatives to operating their own system, are waived for this assignment.

**S298**--Subject to Department of the Interior, U.S. Fish and Wildlife Service net control.

**S299**--Power shown is into a buried vertical dipole. ERP is approximately 1 Kw.

**S300**--This assignment in the 162 to 174 MHz band supports the Federal Wildlife Telemetry program managed by the Department of the Interior's U.S. Fish and Wildlife Service. It is authorized on a noninterference basis and will be used for short-term periods at unspecified locations throughout the United States and possessions.

**S301**--Operations under the authority of this assignment a) are not protected from harmful interference which may be caused by authorized stations operating in accordance with the National Table of Frequency Allocations and b) are subject to immediate adjustment, including cessation, if they result in harmful interference to authorized stations operating in accordance with that table.

**S302**--Subject to the understanding that equipment will not be developed for operational use in this band.

**S303**--Subject to the understanding that there is not intended operational use of this equipment within USP.

**S319**--Federal Government use of frequencies in the 4940-4990 MHz band will be on a non interference basis to any non-government operations and shall not hinder the implementation of any non-government operations.

**S320**--This planning assignment is to assess the viability of the relocation of a current assignment from the 1710-1770 MHz band for the possible future accommodation of commercial advanced mobile wireless systems in that band. This assignment is not to exceed three years (see section 9.6.5 of the NTIA Manual). This note will be deleted if this assignment is activated.

**S321**--This assignment is for planning purposes not to exceed 3 years (see Section 9.6.5). The Note will be deleted after the assignment has been activated or this assignment will be deleted after specific locations have been notified.

**S322**--Stations established under the authority of this assignment shall conform to its technical particulars and shall be notified, as specified in Section 9.1.3 of the NTIA Manual, for inclusion in the list of Frequency Assignment to Government Radio Stations.

**S323**--This assignment is for use in a system, or research and development looking toward such a system, for which funds have been committed for Stage 1 (Planning [conceptual]), as defined in Section 10.4.1 of the NTIA Manual prior to January 1, 1973. Follow-on stages in the system life cycle are subject to the provisions of Part 10.4 of the NTIA Manual.

**S324**--This assignment is for use in a system, or research and development looking toward such a system, for which funds had been committed for Stage 2 (Experimentation), as defined in Section 10.4.1 of the NTIA Manual, prior to January 1, 1973. Follow-on stages in the system life cycle are subject to the provisions of Part 10.4 of the NTIA Manual.

**S325**--This assignment is for use in a system, or research and development looking toward such a system, for which funds had been committed for Stage 3 (Development), as defined in Section 10.4.1 of the NTIA Manual, prior to January 1, 1973. Follow-on stages in the system life cycle are subject to the provisions of Part 10.4 of the NTIA Manual.

**S326**--This assignment is for use in a system, or research and development looking toward such a system, for which funds had been committed for Stage 4 (Procurement), as defined in Section 10.4.1 of the NTIA Manual, prior to January 1, 1973.

**S327**--Marine environmental protection command/control/surveillance operations. Authorized additionally for other maritime mobile operations when not required for marine environmental purposes.

**S328**--This assignment is not planned for renewal. It has been replaced by another assignment.

**S330**--The equipment nomenclature or appropriate equipment coding is to be provided within six months after activation of the authorized stations.

**S331**--This US&P authority for interoperable incident response and law enforcement operations in accordance with NTIA Manual 4.3.16, is on a non-interference basis to authorized adjacent 25KHz wideband channel operations until January 1, 2005 for the bands M162-174 and January 1, 2008 for the bands M138-M150 and M406.1-M420.

**S334**--Subject to Department of the Interior, Bureau of Land Management net control.

**S335**--This telemetry assignment is on a non-interference, non-protected basis as concerns assignments in the aeronautical mobile service.

**S337**--This ITU Appendix 18 frequency for public correspondence from ships to coast stations is assigned to a

remote Coast Guard lighthouse because it has no other means for entering the RCA ALSCOM System.

**S340**--To be used in support of DOE scientific missions with protected status for short periods of time during actual operations. Such use will require coordination between the DOD and DOE and will be on a scheduled basis.

**S341**--Subject to the continued applicability of note P074, this WSMR assignment is exempt from the requirement to be converted to a frequency listed in Section 4.3.7, NTIA Manual.

**S343**--Within the areas listed in footnote US117 in the National Table of Frequency Allocations, operations under the authority of this assignment, other than those of mobile stations, are subject to prior coordination with the Secretary of the Committee on Radio Frequencies of the National Academy of Sciences.

**S344**--This assignment has been granted a waiver and need not comply to the provisions of Section 8.2.20 of the NTIA Manual.

**S345**--DOE operations in the band 4400-4940 MHz under this authority will be for emergency deployment of the NEST system. For such use in a given area, DOE will select clear channels based upon current GMF records. If time permits, DOE will coordinate specific frequencies with the appropriate military frequency managers/coordinators in the field. Tests and training will not be conducted under this authority; frequency applications for such operations will be submitted to the FAS/IRAC on a case by case basis.

**S346**--This FAA assignment in the band 118- 136 MHz is for standby equipment and is used interchangeably with a co-channel assignment at a separate site.

**S348**--Operations are subject to compliance with FCC Rules and Regulations, Part 95, Subpart D. Transmitters may be operated only by employees of the Federal Government only for the purpose of interfacing with Non-Government licensees to coordinate essential and mutual activities. This authority may be revoked by the Federal Communications Commission in its discretion at any time.

**S349**--Not to preclude assignment of this frequency outside of normal land mobile interference range (excluding skip and sporadic E reflection etc.) of DOE receive stations.

**S350**--In the frequency band 30-400 MHz for this FAC operation, power shown is for primary equipment. Back-up equipment has been engineered and installed with output power up to 35 watts. Use of this back-up equipment is authorized during emergencies and/or failure of primary equipment.

**S351**--This assignment is planned for implementation or deletion as a consolidation of frequencies being used.

**S352**--This assignment is for intermittent wide area requirements of transient, itinerant nature pursuant to Section 4.2.3 of the Manual.

**S353**--This assignment is for a common user frequency pursuant to Section 4.2.4 of the Manual.

**S354**--This planned assignment is for a Space Project that has been approved in principle by NTIA in the research/development phase. Some operational characteristics have not been determined. This listing does not provide authority to transmit.

**S355**--This assignment is for a wide-area, common-use frequency pursuant to Section 4.2.5 of the NTIA Manual.

**S356**--This assignment is for a local-area, common-use frequency pursuant to Section 4.2.6 of the NTIA Manual.

**S357**--Power shown is for emergencies only. Normal power is 10 kw.

**S358**--This assignment is exempt from referral to NTIA by Exception 1 of the domestic fixed policy in Section 8.2.11 of the NTIA Manual.

**S359**--This assignment is exempt from referral to NTIA by Exception 2 of the domestic fixed policy in Section 8.2.11 of the NTIA Manual.

**S360**--This assignment is exempt from referral to NTIA by Exception 3 of the domestic fixed policy in Section 8.2.11 of the NTIA Manual.

**S361**--Multiple transmitting and/or receiving stations operating at FIXED locations are involved in this assignment; and, it is not feasible to indicate all specific locations. (The method of operation must be fully explained in supplementary details when S361 is applied to a frequency assignment.)

**S362**--One or more transportable transmitting and/or receiving stations are utilized in this assignment.

**S366**--All operations will be outside of the U.S./Canada Border Zone, or for assignments for frequencies below 1000 MHz the power used while operating in the Border Zone will not exceed 5 watts.

**S367**--This frequency assignment has been made on an exceptional basis for operation in the National Radio Quiet Zone on the conditions that use shall be minimized consistent with operational requirements and that any technical modification to this assignment shall be coordinated in accordance with NTIA Manual 8.3.9.

**S368**--Subject to Department of the Interior, Bureau of Reclamation net control.

**S369**--This assignment is in accordance with Section 8.2.44.

**S370**--Transportable Earth Station operations in the 7300-7750 MHz and 8025-8400 MHz bands shall be deployed in such a manner as not to cause harmful interference to existing assignments and will adjust to allow additional stations of other radio services in these bands as required.

**S371**--This assignment is in accordance with Chapter 10 and Part 7.14 of the NTIA Manual.

**S372**--This assignment for the San Francisco/Pt. Reyes area is subject to adjustments to accommodate new systems/programs or reassignments resulting from the implementations of these systems/programs.

**S373**--This assignment, in the 2700-2900 MHz band, is for operation in a designated heavily used area or for collocated operation (see Annex D of the NTIA Manual). This equipment has the capability of implementing the additional Electromagnetic Compatibility (EMC) provisions of RSEC Criteria D under Section 5.3 of the NTIA Manual. Implementation of this capability may be necessary at a later date.

**S375**--Operations authorized by assignments bearing this note shall be subject to the GMF recording method being developed in accordance with IRAC Doc. 23200/1 (FAS ADM 830029/1).

**S376**--Operations on this frequency under direct-control of the USDA, Forest Service.

**S378**--In emergency situations a maximum power of 25 watts for ship stations and 10 watts for coast stations is authorized.

**S379**--This assignment shall expire upon conclusion of the OPERATION ALLIANCE mission.

**S381**--Operations under this assignment are for SHARES traffic in accordance with Section 7.3.5 of the NTIA Manual.

**S382**--This record is retained for spectrum management and analysis purposes and does not constitute an NTIA authority to transmit.

**S383**--This sounder assignment complies with Section 8.2.21 of the NTIA Manual. The frequency bands listed in paragraph 1.c. of Section 8.2.21 have been suppressed. The information required by paragraph 2 of Section 8.2.21 is provided in the supplementary details of this assignment.

**S384**--This assignment has been made pursuant to Part 4.3.2 of the NTIA Manual.

**S385**--This GMF listing identifies passive sensor or Radio Astronomy receiving stations for spectrum management and analysis purposes and does not constitute an NTIA authority to transmit. Interference protection to the receiving station is afforded only to the extent provided in the National Table of Frequency Allocations.

**S386**--Operations authorized by assignments bearing this note shall be restricted to direct support of the OPERATION ALLIANCE mission, and are subject to the management and control of the U.S. Customs Service.

**S387**--Upon implementation of narrowband operations this channel will be vacated.

**S388**--This assignment supports DSCS Operations Center earth stations limited to locations at Fort Detrick, and Fort Meade, Maryland, and Camp Roberts, California. This assignment shall not preclude new terrestrial assignments within or overlapping the frequency band 7250-7750 MHz provided each new terrestrial assignment does not exceed a maximum tolerable interfering power of -141.3 dBm in any 30 kHz bandwidth at the earth station receiver. In addition, this assignment has no priority over either future meteorological-satellite systems (See G104) or terrestrial assignments authorized prior to April 26, 1994.

**S389**--The bands 2390-2400 and 2402-2417 MHz were identified for immediate reallocation, effective August 10, 1994, for exclusive non-Government use under Title VI of the Omnibus Budget Reconciliation Act of 1993. Effective August 10, 1994, any Government operations in these bands are on a noninterference basis to non-Government operations and shall not hinder the implementation of any non-Government operations.

**S390**--This assignment for wideband telegraphy, facsimile and/or special transmission systems in the Maritime Mobile Service is being made in accordance with the NTIA Manual, Section 8.2.29, paragraph 5.c.(1) and ITU RR 52.170.

**S391**--This assignment is an expansion or enhancement of an existing system in the 138-150.8, 162- 174, or 406.1-420 MHz band which utilizes a band-width greater than 11 kHz.

**S392**--The bands 2300-2310 and 2400-2402 MHz were identified for reallocation, effective August 10, 1995, for exclusive non-Government use under Title VI of the Omnibus Budget Reconciliation Act of 1993. Effective August 10, 1995, any Government operations in these bands are on a non-interference basis to authorized non-Government operations and shall not hinder the implementation of any non-Government operations.

**S393**--The band 2417-2450 MHz was identified for reallocation, effective August 10, 1995, for mixed Government and non-Government use under Title VI of the Omnibus Budget Reconciliation Act of 1993.

**S396**--This assignment is in accordance with either Section 4.3.7, paragraph 5d, or Section 4.3.9, paragraph 6d, of the NTIA Manual.

**S397**--This assignment is for a joint law enforcement requirement pursuant to Section 4.3.16 of this Manual.

**S398**--This assignment is for a joint incident response requirement pursuant to Section 4.3.16 of this Manual.

**S399**--Effective January 1, 2005, any Government operation in the band 162-174 MHz, not conforming to the 12.5 kHz channel plan, is on a non-interference basis to all operations that do conform to the 12.5 kHz channel plan in accordance with Section 4.3.7 of the NTIA Manual.

**S514**--This assignment supports NASA Space Program ATS-3.

**S518**--This assignment supports NASA Space Program ATS-1.

**S544**--This assignment supports NASA Deep Space Program PIONEER.

**S545**--This assignment supports NASA/Commerce Earth Exploration Service Space Program LANDSAT.

**S553**--This assignment shall expire upon completion of Space Project Defense Meteorological Satellite Program Block 5.

**S558**--This assignment shall expire upon completion of Space Project SAMSO 080-70.

**S566**--This assignment shall expire upon completion of Space Project Advanced Technology Satellite Global Positioning System.

**S567**--This assignment shall expire upon completion of Space Project Deep Space Program.

**S569**--This assignment shall expire upon completion of Space Project Transit Improvement Program (TIP).

**S570**--This assignment shall expire upon completion of Space Project FLEETSATCOM.

**S571**--This assignment shall expire upon completion of Space Project LES 8/9.

**S572**--This assignment shall expire upon completion of Space Project Air Force Satellite Data System.

**S574**--This assignment supports NASA Space Program ISEE.

**S575**--This assignment supports NASA Space Program TDRSS.

**S576**--This assignment supports NASA Space Program Space SHUTTLE (STS).

**S578**--This assignment supports NASA Space Program NIMBUS-7.

**S589**--This assignment supports NASA Space Program IMP-8.

**S594**--This assignment is for Space System GOES.

**S595**--This assignment shall expire upon completion of Space Project GPS Phase II.

**S597**--This assignment is in support of Navy Space Surveillance System.

**S603**--This assignment is in support of Space Ground Link Subsystem (SGLS) operations.

**S604**--This assignment is in support of foreign space operations.

**S606**--This assignment shall expire upon completion of Space Project NATO IIIA.

**S615**--This assignment is in support of the FCC authorized EUTELSAT Atlantic Bird-2 Satellite located at 8.0 WL.

**S616**--This assignment shall expire upon completion of Space Project DSCS Phase II.

**S617**--This assignment supports NASA Space Program SAR.

**S619**--This assignment is in support of the INTELSAT V.

**S621**--This Application is in support of a DOD Space Project.

**S622**--This assignment supports NASA Space Program DE-A.

**S625**--This assignment shall expire upon completion of Space Project IUS.

**S626**--This assignment shall expire upon completion of Space Project LEASAT (FLTSATCOM-A).

**S627**--This assignment is in support of the Small Business Satellite.

**S629**--This assignment is in support of Space System TIROS-N.

**S632**--This assignment supports NASA Deep Space Program VOYAGER.

**S633**--This assignment supports NASA Deep Space Program GALILEO.

**S634**--This note is to be used in conjunction with S604, to reflect assignments used by NASA in a cooperative effort with the European Space Agency (ESA) in support of Space Program ULYSSES (formerly known as the International Solar Polar Mission (ISPM)).

**S641**--This assignment supports NASA Space Program SPACE TELESCOPE (ST).

**S642**--This assignment supports NASA Space Program Solar Mesosphere Explorer.

**S643**--This assignment shall expire upon completion of Space Project DSCS Phase III.

**S647**--This assignment supports NASA Space Program ERBS.

**S651**--This assignment supports NASA Space Program Space Station.

**S661**--This assignment is in support of the Strategic Defense Initiative (SDI) Program.

**S662**--This assignment is for Common Carrier service provided in a non-Government Domestic Satellite System. The specific frequency and satellite is dependent upon the Common Carrier selected to provide the service.

**S664**--This assignment shall expire upon termination of the satellite system STATIONAR (USSR).

**S665**--This assignment is in the INMARSAT space system. If this assignment is for a transportable land-based or aeronautical INMARSAT terminal, it is subject to coordination with the Common Carrier Bureau of the Federal Communications Commission. This coordination will be conducted by the Communications Satellite Corporation in accordance with Annex E.

**S666**--This assignment is in support of Space Project NATO IV.

**S668**--This assignment supports NASA Space Program Tethered Satellite System (TSS).

**S669**--This assignment supports the Volunteers in Technical Assistance (VITA) PACSAT space system.

**S670**--This assignment is in support of the FCC authorized INTELSAT satellite system.

**S671**--This assignment supports the Orbital Sciences Corporation DATASAT Space System.

**S673**--This assignment supports NASA Space Program Cosmic Background Explorer (COBE) Satellite.

**S674**--This assignment supports NASA Space Program Atmospheric Research Satellite (UARS).

**S676**--This assignment supports NASA Space Program Advanced Communications Technology Satellite (ACTS).

**S677**--This assignment supports NASA Space Program Astronomical Shuttle Pallet Satellite (ASTROSPAS).

**S678**--This frequency supports AF/DOE Space Project ALEXIS.

**S679**--This assignment supports NASA Space Program Wideband Data Collection System.

**S680**--This frequency supports Commerce project Pan-Pacific Educational and Cultural Experiments by Satellite (PEACESAT).

**S681**--This assignment supports NASA Extra-Vehicular Activity UHF Communications Subsystem.

**S683**--This assignment supports NASA TOPEX/Poseidon (TOPO) Mission.

**S684**--This assignment supports NASA Space Program Solar Anomalous and Magnetospheric Particle Explorer (SAMPEX) in the Small Explorer (SMEX) Project.

**S686**--This assignment supports NASA Explorer Platform (EP).

**S687**--This assignment supports NASA Tether Dynamics Explorer/Tethered Atmospheric Probe (TDE/TAP).

**S690**--This assignment supports the LIGHT-SAT Satellite System.

**S692**--This assignment supports Motorola Satellite Communications, Inc.'s IRIDIUM space system.

**S693**--This assignment supports the NASA Telemedicine 18-Month Demonstration Project.

**S694**--This assignment supports NASA Commercial Experiment Transporter (COMET).

**S695**--This assignment supports Orbiter-ACTS Flight Experiment (O-AFE).

**S696**--This assignment supports NASA Tropical Rainfall Measurement Mission (TRMM).

**S698**--This assignment will expire upon completion of the Space Project NATO IV.

**S700**--This assignment supports NASA SeaStar Ocean Color Project.

**S701**--This assignment supports NASA Energy Transient Experiment (HETE).

**S703**--This assignment supports the NASA Summer Undergraduate Research Fellowship Satellites I and II (SURFSAT).

**S704**--This assignment supports the Interferometrics, Inc. Space System.

**S706**--This assignment supports the NASA Space Radar Laboratory 1 (SRL01).

**S707**--This assignment supports the German SAFIR System.

**S708**--This assignment supports the NASA Total Ozone Monitoring Spectrometer Earth Probe (TOMS-EP).

**S709**--This assignment supports the NASA MicroLab-1 mission.

**S710**--This assignment supports the MILSTAR Communications Satellite System.

**S711**--This assignment supports the NASA "Shuttle/MIR" Communications System.

**S712**--This assignment supports DOE proliferation detection and environmental monitoring satellite program.

**S713**--This assignment supports the NASA Fast Auroral Snapshot Explorer (FAST).

**S714**--This assignment supports the NASA Submillimeter Wave Astronomy Satellite (SWAS).

**S715**--This assignment supports the NASA International Solar Terrestrial Program (ISTP) Interplanetary Physics Laboratory WIND.

**S717**--This assignment supports the NASA Earth Observing System AM (EOS).

**S719**--This assignment supports the NASA Advanced Composition Explorer (ACE).

**S720**--This assignment supports the NASA Near Earth Asteroid Rendezvous (NEAR).

**S721**--This assignment supports the NASA MARS PATHFINDER Satellite System.

**S722**--This assignment supports the NASA CASSINI Satellite System.

**S723**--This assignment supports the NASA Advanced X-Ray Astrophysics Facility-Imaging (AXAFI) Satellite System.

**S724**--This assignment is for commercial service using the Russian LOUTCH WSDRN Satellite.

**S725**--This assignment is in support of the Small Spacecraft Technology Initiative (SSTI) CLARK Satellite.

**S726**--This assignment supports the NASA X-Ray Timing Explorer (XTE).

**S727**--This assignment is in support of the HEALTHSAT-II Satellite.

**S728**--This assignment supports the NASA Lewis Satellite System.

**S729**--This assignment supports National Ocean Service experiments with TDRS 174W.

**S730**--This assignment supports the NOAA K, L, and M Satellite System.

**S731**--This assignment supports the NASA Polar Plasma Laboratory Satellite System - POLAR.

**S732**--This assignment supports the CTA Commercial Systems, Inc. space system.

**S733**--This assignment supports the EARTHWATCH Remote Sensing System.

**S734**--This assignment supports the E-SAT, Inc. space system.

**S735**--This assignment supports the NASA Student Nitric Oxide Explorer (SNOE) Satellite System.

**S736**--This assignment supports the NASA Tomographic Experiment using Radioactive Recombinative Ionospheric EUV and Radio Sources - TERRIERS.

**S737**--This assignment supports the Hughes Communications Galaxy, Inc. GALAXY VIII (I) Satellite.



**S738**--This assignment supports the NASA Mars Global Surveyor.

**S739**--This assignment supports the NASA Transition Region and Coronal Explorer satellite system (TRACE).

**S740**--This assignment supports the NASA Wide-Field Infrared Explorer satellite (WIRE).

**S741**--This assignment supports the NASA Lunar Prospector Satellite System.

**S742**--This assignment is for use by a U.S. Government earth station supporting a foreign space operation. The responsible Federal agency has waived the NTIA spectrum certification process for the earth station operation. Therefore, although this operation may be in accordance with the National Table of Frequency Allocations, it must be conducted on an unprotected, non-interference basis to those U.S. Operations that are in conformity with the National Table of Frequency Allocations.

**S743**--This assignment shall expire upon termination of the satellite system EXPRESS (Russia).

**S744**--This assignment shall expire upon completion of Space Project MIGHTYSAT.

**S745**--This assignment is in support of a Government Space Program.

**S747**--This assignment is for a receive only earth station for the IRS-1B Satellite.

**S748**--This assignment is for a receive only earth station for the IRS-1C Satellite.

**S749**--This assignment is for a receive only earth station for the ERS-2 Satellite.

**S750**--This assignment is in support of the Space Test Experiment Platform (STEP 0) program.

**S751**--This assignment supports the Orbital Sciences Corp. BATSAT MicroStar Spacecraft.

**S752**--This assignment supports the NASA Gravity Probe-B satellite system.

**S753**--This assignment supports the NASA International Space Station (ISS) VHF Voice Communications Link (IVVCL).

**S754**--This assignment is for a receive only earth station in the band 8025-8400 MHz for the Spot 1 and Spot 2 Satellite.

**S755**--This assignment supports the NASA SIMPLSAT Satellite System.

**S758**--This assignment is in support of the PANAMSAT PAS-8 and PAS-9 Satellites.

**S759**--This assignment supports the NASA Thermosphere-Ionosphere-Mesosphere-Energetics-Dynamics (Timed) Satellite System.

**S760**--This assignment supports the Ikonos-1 and Ikonos-2 Satellite System.

**S761**--This assignment supports the NASA Imager for Magnetopause-to-Aurora Global Exploration (IMAGE).

**S762**--This assignment supports the ICO Medium Orbit Satellite Constellation.

**S763**--This assignment is in support of a government program using a commercial contractor operating in the non-government space band. The license to operate is held by a non-government entity in support of this program. This record is incorporated into the Government Master File for spectrum analysis, and information purposes.

**S764**--This assignment supports the TELEDESIC Satellite System.

**S765**--This assignment supports the GLOBALSTAR Satellite System.

**S767**--This assignment supports the Orbview Space System.

**S768**--This assignment supports the NASA Microwave Anisotropy (MAP) Satellite System.

**S769**--This assignment is for a receive only earth station for the IRS-1D Satellite.

**S770**--This assignment is for an experiment using the Canadian MSAT Satellite System.

**S771**--This assignment supports the NASA Quikscat Satellite System.

**S772**--This assignment supports the NASA Lyman-Far Ultraviolet Spectroscopic Explorer (FUSE) Satellite System.

**S773**--This assignment supports the NASA X-38 201 Vehicle Communications System.

**S774**--This assignment supports the NASA Deep Space-1 (DS-1) Communications System.

**S775**--This assignment supports the NASA Active Cavity Radiometer Irradiance Monitor Satellite System (ACRIMSAT).

**S776**--This assignment supports the NASA Proximity Operations Communications Systems (POCS).

**S778**--This assignment supports the NASA Stardust Satellite System.

**S779**--This assignment supports the NASA Vegetation Canopy Lidar (VCL) Communications System.

**S780**--This assignment supports the NASA Earth Orbiter-1 (EO-1) Communications System.

**S781**--This assignment supports the NASA USAGenesis Communications System.

**S782**--This assignment supports the NASA Earth Observation System-PM (EOS-PM) Communications System.

**S783**--This assignment is in support of the NAHUEL-C Satellite System (Argentina).

**S784**--This assignment supports the NASA Cooperative Astrophysics and Technology Satellite (Cat- Sat) Communications System.

**S785**--This assignment supports the NASA High Energy Solar Spectroscopic Imager (HESSI) Communications System.

**S786**--This assignment supports the NASA Galaxy Evolution Explorer (GALEX) Satellite Communications System.

**S787**--This assignment supports the NASA Ice, Cloud, and Land Elevation (ICESAT) Satellite Communications System.

**S788**--This assignment supports the NASA Space Infrared Telescope Facility (SIRTF) Communications System.

**S789**--This assignment supports the FCC Galaxy-11 Satellite System.

**S790**--This assignment supports the NASA X-38 201 Vehicle Communications System.

**S791**--This assignment supports the NASA Mars Surveyor 2001 Orbiter Communications System.

**S792**--This assignment supports the NASA Wire-less Video System (WVS) Communications System.

**S793**--This assignment supports the NASA Quick React Total Ozone Mapping Spectrometer (QUICKTOMS) Satellite Communications System.

**S794**--This assignment supports the NASA Triana Satellite Communications System.

**S795**--This assignment supports the HISPASAT-1C Satellite System.

**S796**--This assignment supports the Astrovision Satellite System.

**S797**--This assignment supports the NASA Solar Radiation and Climate Experiment (SORCE) Satellite Communications System.

**S798**--This assignment supports the NASA Space Shuttle Integrated Communications System (ICS).

**S799**--This assignment supports the NASA Swift Gamma Ray Medium Class Experiment (MIDEX) Satellite Communications System.

**S800**--This assignment supports the NASA Comet Nucleus Tour (CONTOUR) Satellite Communications System.

**S801**--This assignment supports the NASA Cosmic Hot Interstellar Plasma Spectrometer (CHIPS) Mission Satellite Communications system.

**S802**--This assignment is in support of the FCC authorized AMC-4 (formerly GE-4) satellite system.

**S803**--This assignment supports the NASA propulsive small expendable deployer system (proseds) satellite communications system.

**S804**--This assignment is in support of the PANAMSAT PAS-5 satellite system.

**S805**--This assignment is in support of the PANAMSAT PAS-1R satellite system.

**S806**--This assignment is in support of the NASA PICASSO Satellite Communications System.

**S807**--This assignment is in support of the ORCA Satellite System.

**S808**--In accordance with US245 in the band 3600-3650 MHz, an EMC analysis based on the NTIA TR-99-361 report was performed by the non-federal government applicant and the non-federal government applicant agrees to accept this potential interference.

**S809**--In accordance with US348 in the band 3650-3700 MHz, an EMC analysis based on the NTIA TR-99-361 report was performed by the non-federal government applicant and the non-federal government applicant agrees to accept this potential interference.

**S810**--This band 5850-5925 MHz is shared co-primary with federal government radio location systems. The non-federal government space station receiver shall accept any interference from radio location stations operating in accordance with footnote G2.

**S811**--This assignment supports the NASA Ionospheric Observation Nano-Satellite Formation Satellite Communications System.

**S812**--This assignment supports the NASA Earth Observing System (EOS) - Aura Satellite Communications System.

**S813**--This assignment supports the NASA Full-Sky Astrometric Mapping Explorer (FAME) Satellite Communications System.

**S814**--This assignment is in support of the Atlantic Bird 2 (EUTELSAT) at 8.0 WL satellite system.

**S815**--This assignment supports the NASA Small Payload Access to Space Experiment (SPASE) satellite communications system.

**S816**--In the band 3600-3650 MHz, in accordance with US245, i) an EMC analysis based on the NTIA TR-99-361 report was performed by the non-government applicant and the non-government applicant agrees to accept this potential for unacceptable interference, and ii) these fixed-satellite service operations are limited to international inter-continental systems.

**S817**--In the band 3650-3700 MHz, in accordance with US348, an EMC analysis based on the NTIA TR-99-361 Report was performed by the non-Government applicant and the non-Government applicant agrees to accept this potential for unacceptable interference from the three stations identified in US348. Additionally, per US245, in the band 3650-3700 MHz, these fixed-satellite service operations are limited to international inter-continental systems.

**S818**--The band 5850-5925 MHz is shared on a co-primary basis with Federal Government radiolocation systems in the U.S. and Possessions. In accordance with US245, i) the applicant is aware of the potential allocation and electromagnetic compatibility issues in the 5850-5925 MHz frequency band and the applicant agrees to accept

this potential for unacceptable interference from radiolocation stations operating in accordance with footnote G2 and ii) these fixed-satellite service operations are limited to international inter-continental satellite systems.

**S819**--In the U.S. and Possessions, the band 5850-5925 MHz is shared on a co-primary basis with Federal Government radiolocation systems. In accordance with US245, this earth station transmitter has been successfully coordinated with the Federal Government. The Federal Government operators have evaluated the potential interference from this earth station transmitter to their radiolocation receivers and have concluded that no unacceptable interference will occur. Any conditions placed on the earth station transmitter are included in SUPPLEMENTARY DETAILS. Any conditions required to protect radiolocation receivers will also be included in the FCC license.

**S820**--This assignment is in support of the FCC authorized New Skies satellite system.

**S821**--This assignment supports the NASA Mercury Surface Space Environment, Geochemistry and Ranging (MESSENGER) Satellite Communications System.

**S823** This assignment is in support of the FCC authorized TELSTAR-6 satellite system.

**S823**--This assignment is in support of the FCC authorized TELSTAR-6 satellite system.

**S824**--This assignment is in support of the NASA Mars Exploration Rover 1 and 2 (MER-1 and MER-2) Satellite Communications System.

**S825**--This assignment is in support of the FCC authorized Mabuhay (AGUILA 2) satellite located at 146.0 EL.

**S826**--This assignment is in support of the FCC authorized GE-3 satellite located at 87.0 WL.

**S827**--This assignment is in support of the FCC authorized HISPASAT 1A, 1B, 1C satellite located at 37.0 WL.

**S828**--This assignment is in support of the FCC authorized ECHOSTAR 1 satellite located at 148 WL.

**S829**--This assignment is in support of the FCC authorized ECHOSTAR 2 satellite located at 148 WL.

**S830**--This assignment is in support of the FCC authorized ECHOSTAR 4 satellite located at 119 WL.

**S831**--This assignment is in support of the FCC authorized ECHOSTAR 6 satellite located at 119 WL.

**S832**--This assignment is in support of the FCC authorized GALAXY III-C, GALAXY VIII(I)-R, AND GALAXY VIII- I satellites located at 95.0 WL.

**S833**--This assignment is in support of the FCC authorized EUTELSAT Atlantic Bird-3 satellite located at 5.0 WL.

**S834**--This assignment supports the NASA Deep Impact Satellite Communications System.

**S835**--This assignment supports the NASA AeroAstro ST-5 Nanosat Constellation Trailblazer (ST-5) Satellite Communications System.

**S836**--This assignment supports the NASA New Horizons Satellite Communications Systems.

**S837**--This assignment supports the NASA Mars Reconnaissance Orbiter Satellite Communications Systems.

**S838**--This assignment supports the NASA Spectroscopy and Photometry of the Intergalactic Medium's Diffuse Radiation (SPIDR) Satellite Communications System.

**S839**--This assignment supports the NASA Solar Terrestrial Relations Observatory (STEREO) Satellite Communications System.

**S840**--This assignment is in support of the FCC authorized Marisat-F2 Satellite located at 33.9 W.L.

**S841**--This assignment is in support of the FCC authorized AMOS Satellite located at 4.0 W.L.

**S842**--This assignment is in support of the NASA DAWN Satellite Communications System.

**S843**--This assignment is in support of the FCC authorized ESTRELA DO SUL 1 Satellite located at 63.0 W.L.

**S844**--This assignment is in support of the FCC authorized experimental non-voice non-geostationary Aprize satellite.

#### **Endnotes for Annex A-F**

<sup>1</sup> Applies to SSB transmissions.

<sup>2</sup> Applies to two or more independent sideband channels.



## **ANNEX G - LIST OF DOD-APPROVED SYSTEM IDENTIFIERS**

This Annex is reserved for future use.



## **ANNEX H**

### **STANDARDIZED STATUS CODES USED FOR STATUS TRACKING**

1. The following standard status codes are used to track the status of records within the SPECTRUM XXI FRRS processing system. The following are brief descriptions of each code. (In this appendix, the term “Job Account” either refers to the actual Job Account or the corresponding user):

<b>STATUS CODE</b>	<b>DESCRIPTION</b>
<b>ORIGINATED BY or IMPORTED BY</b>	These codes identify the Job Account that originated (created) the proposal or imported the proposal into the software program.
<b>COMPLIANCE</b>	This code identifies that compliance was performed successfully or performed with errors and overridden.
<b>COORDINATION</b>	This code identifies the beginning and ending of manual (non-system related) coordination. The comment field is used to describe the coordination effort.
<b>RECEIVED BY</b>	This code indicates the proposal has been received by the given Job Account for processing.
<b>IN-PROCESS AT</b>	This code identifies the first time the proposal was loaded into the Proposal Editor by a Job Account. The intent is to identify when each Job Account began working on the proposal.
<b>MODIFIED BY</b>	This code identifies the last time the proposal was modified in the Proposal Editor.
<b>APPROVED BY</b>	This code indicates that a Job Account approved a proposal.
<b>LATERAL COORDINATION</b>	This code indicates that a record has been electronically laterally coordinated with other data-exchanging clients (Job Accounts). The Originator and Coordinators add their coordination comments into the record on the LATERAL COORDINATION line.
<b>ASSIGNED BY</b>	This code indicates that a Job Account has assigned a temporary or permanent proposal. (Technically a permanent proposal remains a proposal until it is recorded in the FRRS database but according to the frequency management coordination process, a permanent proposal becomes an assignment the moment the user assigns it.)

<b>REJECTED BY</b>	This code indicates that a Job Account has rejected a proposal or that the proposal was automatically rejected during data exchange by a regional server.
<b>SUBMITTED TO</b>	This code is a request to submit the Permanent Proposal to NTIA (National Telecommunications and Information Administration) to become a Permanent Assignment.
<b>TABLED BY</b>	This code is used by NTIA only. It signifies that the proposal has been tabled for further discussion. (All "IRAC (Interdepartment Radio Advisory Committee)-reportable" Permanent Proposals are submitted to the NTIA for FAS (Frequency Assignment Subcommittee) approval. Approved Permanent Proposals become Permanent Assignments.)
<b>DELETED BY</b>	This code indicates that a Job Account has deleted a Permanent Assignment, Permanent Proposal, Temporary Assignment, or Temporary Proposal.
<b>FORWARDED TO</b>	This code indicates that the Job Account has requested the proposal be transferred from the current Job Account to another Job Account, usually on another platform.
<b>INFO TO</b>	This code indicates that a courtesy copy of the proposal was forwarded to the specified Job Account.
<b>NOTIFIED BY</b>	This code indicates that a Job Account has posted the Temporary Assignment to a regional server (or has requested that the Temporary Assignment be posted during the next data exchange). This posting serves to notify the community of the Temporary Assignment.
<b>REGISTERED WITH</b>	This code indicates that a request has been made to register a "non-IRAC reportable" record with the FRRS. (FRRS registration converts Permanent Proposals into Permanent Assignments.
<b>ADMIN MOD BY</b>	This code is placed on the proposal when an administrative modification is created and sent to the server.



## ANNEX I – LIST OF DoD AGENCY SPECIFIC FUNCTION IDENTIFIERS

DoD has approved the following list of function identifiers for use in Data Items 511, 512, and 513. Data entries are always required in Data Items 511 and 512. Data Item 513 will be filled whenever an applicable data entry exists or at the discretion of the MILDEP or COCOM approval authority. Only the data shown in bold will be entered into computer databases. Non-bold lower case data in parenthesis is only shown for information purposes to assist frequency managers in selecting the correct data entry. For example,

511. AIR OPERATIONS

512. AIR/GROUND/AIR COMMUNICATIONS

513. FLIGHT FOLLOWING

Immediately following the table is a list containing the definitions for all the data entries contained within the table.

MAJOR FUNCTION IDENTIFIER (SFAF DATA ITEM 511)	INTERMEDIATE FUNCTION IDENTIFIER (SFAF DATA ITEM 512)	DETAILED IDENTIFIER (SFAF DATA ITEM 513)
AIR OPERATIONS	AIR/AIR COMMUNICATIONS	
		A-EPLRS
		AIR DEFENSE/INTERCEPT
		BLUE ANGELS
		HAVE QUICK
		HELO CONTROL
		INSTRUCTOR/STUDENT TRAINING
		INTERPLANE
		PILOT-TO-PILOT
		REFUELING
		THUNDERBIRDS
	AIR/GROUND/AIR COMMUNICATIONS	
		AIR DEFENSE/INTERCEPT
		BROADCAST
		COMMAND POST
		FLIGHT FOLLOWING (Non-ATC)
		GOLDEN KNIGHTS
		HAVE QUICK
		PILOT-TO-DISPATCHER
		PILOT-TO-METRO
		SQUADRON/WING COMMON

<b>MAJOR FUNCTION IDENTIFIER (SFAF DATA ITEM 511)</b>	<b>INTERMEDIATE FUNCTION IDENTIFIER (SFAF DATA ITEM 512)</b>	<b>DETAILED IDENTIFIER (SFAF DATA ITEM 513)</b>
		<b>SOF (SUPERVISOR OF FLYING)</b>
		<b>TRAINING</b>
	<b>AIR DEFENSE</b>	
		<b>BMDS (Balistic Missile Defense System)</b>
		<b>GMD (Ground Missile Defense)</b>
	<b>AIR TRAFFIC CONTROL</b>	
		<b>APPROACH CONTROL</b>
		<b>ATIS (Auto Terminal Information Service)</b>
		<b>CLEARANCE DELIVERY</b>
		<b>DBRITE</b>
		<b>DEPARTURE CONTROL</b>
		<b>FEEDER CONTROL</b>
		<b>FLIGHT INSPECTION</b>
		<b>GCA</b>
		<b>GROUND CONTROL</b>
		<b>LOCAL CONTROL</b>
		<b>TOWER</b>
	<b>EXECUTIVE</b>	
		<b>AIR FORCE ONE</b>
		<b>AIRBORNE COMMAND CENTER</b>
		<b>COCOM/GENERAL OFFICER SUPPORT</b>
		<b>ERCS (Emergency Rocket Communications Sys)</b>
		<b>MYSTIC STAR</b>
		<b>NAOC (National Airborne Operations Center)</b>
		<b>NORAD</b>
		<b>WHCA (White House Communications Agency)</b>
	<b>FLIGHT TEST</b>	
	<b>NAVAIDS</b>	
		<b>AIR ROUTE SURVEILLANCE RADAR</b>

<b>MAJOR FUNCTION IDENTIFIER (SFAF DATA ITEM 511)</b>	<b>INTERMEDIATE FUNCTION IDENTIFIER (SFAF DATA ITEM 512)</b>	<b>DETAILED IDENTIFIER (SFAF DATA ITEM 513)</b>
		<b>AIRPORT SURVEILLANCE RADAR</b>
		<b>BEACON</b>
		<b>ETCAS</b> (Enhanced Traffic Collision Avoid System)
		<b>IFF/SIF</b>
		<b>ILS</b> (instrument landing sys)
		<b>MLS</b> (Microwave Landing System)
		<b>PAR</b> (Precision Approach Radar)
		<b>RF TAGS</b> (Radio Frequency Tags and Interrogators)
		<b>TACAN</b>
		<b>TCAS</b> (Traffic Collision Avoidance System)
		<b>VOR</b>
		<b>VORTAC</b>
		<b>WEATHER RADAR</b>
	<b>TELECOMMAND</b>	
		<b>COMMAND DESTRUCT/TERMINATION</b>
		<b>DRONE CONTROL</b>
		<b>MICROWAVE DATA LINK</b>
		<b>TMGS</b> (Transportable Mobile Ground Subsystem)
		<b>TOSS</b> (TV Ordinance Scoring System)
	<b>UAV</b> (Unmanned Aerial Vehicle)	
	<b>TRAINING</b>	
	<b>TARGET ACQUISITION</b>	
		<b>Longbow</b>
		<b>MISSILE</b>
<b>GROUND OPERATIONS</b>	<b>AIR DEFENSE</b>	
		<b>ARTILLERY</b>
		<b>Avenger-STC</b>
		<b>FAADC2</b> (Forward Area Air Defense, Command and Control)

<b>MAJOR FUNCTION IDENTIFIER (SFAF DATA ITEM 511)</b>	<b>INTERMEDIATE FUNCTION IDENTIFIER (SFAF DATA ITEM 512)</b>	<b>DETAILED IDENTIFIER (SFAF DATA ITEM 513)</b>
		<b>LINEBACKER</b>
		<b>PATRIOT</b>
		<b>SENTINEL</b> (AN/MPQ-64 Surveillance Radar)
	<b>ENGINEERS</b>	
		<b>GRIZZLY</b> (M1 Breacher Mine Sweeper)
		<b>M93A1 FOX</b>
		<b>WOLVERINE</b> (Assault Bridge)
	<b>ARTILLERY</b>	
		<b>AQF</b> (Advanced Quick Fix)
		<b>LLDR</b> (Lightweight Laser Designator Rangefinder)
		<b>MLRS</b> (Multiple Launch Rocket System)
	<b>BATTLE COMMAND</b>	
		<b>A2C2S</b> (Army Airborne Command & Control System)
		<b>A-EPLRS (SADL)</b>
		<b>CTT</b> (Commander's Tactical Terminal)
		<b>EPLRS</b> (Enhanced Position Location Reporting System)
		<b>LAND WARRIOR</b>
		<b>NTDR</b> (Near Term Digital Radio)
		<b>SCAMP</b> (Single Channel Anti-Jam Manportable Terminal)
		<b>SINGARS</b> (Single Channel Ground and Airborne Radio System)
		<b>SINGARS-ASIP</b> (Single Channel Ground and Airborne Radio System-Advanced System Improvement Plan)
		<b>WIN-T</b> (Warfighter Information Network-Tactical)
	<b>CAVALRY</b>	
		<b>STRIKER II</b> (Advanced Fire Support/Scout/Surveillance System)
	<b>CLOSE AIR SUPPORT (CAS)</b>	

<b>MAJOR FUNCTION IDENTIFIER (SFAF DATA ITEM 511)</b>	<b>INTERMEDIATE FUNCTION IDENTIFIER (SFAF DATA ITEM 512)</b>	<b>DETAILED IDENTIFIER (SFAF DATA ITEM 513)</b>
	<b>COMBAT CONTROL TEAM</b>	
	<b>COMMAND POST</b>	
	<b>ELECTRONIC WARFARE</b>	
		<b>ACS</b> (Aerial Common Sensor)
		<b>AHFEWS</b> (Army HF EW System)
		<b>ARL</b> (Aerial Reconnaissance-Low)
		<b>IEWCS</b> (Intelligence Electronic Warfare Common Sensor)
		<b>LMRDFS</b> (Light Man-portable Radio Direction Finding System)
		<b>TACJAM</b> (Tactical Communications Jamming System)
		<b>TEAMMATE</b>
		<b>TRACKWOLF</b>
	<b>FIRE SUPPORT</b>	
		<b>AFATDS</b>
		<b>ARTILLERY</b>
		<b>CLOSE AIR SUPPORT</b> (CAS)
		<b>MFCS</b> (Mortar Fire control System)
	<b>FORWARD AIR CONTROL POST</b>	
	<b>GROUND INTERDICTION</b>	
		<b>CIWS</b> (Close-In Weapons System)
		<b>GBCS-L</b> (Ground Based Common Sensor-Light)
		<b>GSR</b> (Ground Surveillance Radar)
		<b>I-REMBASS</b> (Improved-Remotely Monitored Battlefield Sensor System)
		<b>TRAILBLAZER</b> (Ground Based Communications Intelligence System)
	<b>INFANTRY</b>	
	<b>INTELLIGENCE</b>	
		<b>ASAS</b> (All Source Analysis System)
	<b>TACCS</b>	
	<b>TRAINING</b>	

<b>MAJOR FUNCTION IDENTIFIER (SFAF DATA ITEM 511)</b>	<b>INTERMEDIATE FUNCTION IDENTIFIER (SFAF DATA ITEM 512)</b>	<b>DETAILED IDENTIFIER (SFAF DATA ITEM 513)</b>
<b>SEA OPERATIONS</b>	<b>ASW (ANTI-SUBMARINE WARFARE)</b>	
		<b>SONOBOUY</b>
	<b>ELECTRONIC WARFARE</b>	
	<b>FLEET SUPPORT</b>	
	<b>FORACS</b> (Fleet Operational Readiness Accuracy Check Site)	
	<b>INTELLIGENCE</b>	
		<b>TARGET</b>
	<b>SURFACE NAVAIDS</b>	
		<b>NAVIGATION RADAR</b>
	<b>RESUPPLY</b>	
	<b>SHIP/AIR OPERATIONS</b>	
	<b>SHIP/SHIP</b>	
		<b>AEGIS</b>
		<b>BF E-MAIL</b>
		<b>HYDRA</b>
	<b>SHIP/ShORE OPERATIONS</b>	
		<b>ATFP</b>
		<b>HARBOR-PORT OPERATIONS</b>
		<b>NAVAL GUNFIRE SUPPORT</b>
	<b>TRAINING</b>	
<b>SPACE OPERATIONS</b>	<b>EXPERIMENTAL</b>	
	<b>GBS</b> (GLOBAL BROADCAST SYSTEM)	
	<b>GPS</b> (GLOBAL POSITIONING SYSTEM)	
	<b>METEOROLOGICAL</b>	
		<b>DMSP</b> (Defense Meteorological Satellite Program)
		<b>SAWDS</b> (SATELLITE AUTOMATED WX DIST SYS)
	<b>NASA</b>	
		<b>SHUTTLE</b>
<b>RANGE OPERATIONS</b>	<b>EXPERIMENTAL</b>	
	<b>FLIGHT TEST</b>	
	<b>RANGE CONTROL</b>	

<b>MAJOR FUNCTION IDENTIFIER (SFAF DATA ITEM 511)</b>	<b>INTERMEDIATE FUNCTION IDENTIFIER (SFAF DATA ITEM 512)</b>	<b>DETAILED IDENTIFIER (SFAF DATA ITEM 513)</b>
		<b>OCCS SUPPORT</b>
		<b>RDMS</b> (Range Data Management Subsystem)
		<b>TELEMETRY</b>
		<b>TRUNKING</b>
	<b>SAFETY</b>	
	<b>SIMULATOR</b> (S371 required)	
	<b>TEST RANGE</b>	
		<b>TARGET</b>
		<b>TARGET SCORING</b>
		<b>TEST RANGE TIMING</b>
		<b>TCRS</b> (Target Control System)
		<b>TOSS</b> (TV Ordinance Scoring System)
	<b>TRAINING</b>	
		<b>MITT/DTES</b> (Mobile Integrated Tactical Terminal/Distributed Common Ground System Test and Evaluation Strategy)
<b>SURVEILLANCE/ RECONNAISSANCE</b>	<b>AIR DEFENSE WARNING</b>	
		<b>AWACS</b> (Airborne Warning & Control Sys)
		<b>BMEWS</b> (Ballistic Missile Early Warning System)
		<b>CARS</b> (Contingency Airborne Reconnaissance Sys)
		<b>GRCS</b> (Guardrail Common Sensor)
		<b>JSS</b> (JOINT SURVEILLANCE SYSTEM)
		<b>OTHR/ROTHR</b> (Over-the-Horizon Radar)
		<b>PAVE PAWS</b>
	<b>TRAINING</b>	
<b>SPECIAL OPERATIONS</b>	<b>AIR FORCE SPECIAL OPERATIONS</b>	
	<b>ARMY SPECIAL OPERATIONS</b>	
		<b>CIVIL AFFAIRS</b>
		<b>PSYCHOLOGICAL OPERATIONS</b>

<b>MAJOR FUNCTION IDENTIFIER (SFAF DATA ITEM 511)</b>	<b>INTERMEDIATE FUNCTION IDENTIFIER (SFAF DATA ITEM 512)</b>	<b>DETAILED IDENTIFIER (SFAF DATA ITEM 513)</b>
		<b>RANGER UNITS</b>
		<b>SPECIAL FORCES</b>
	<b>NAVY SPECIAL OPERATIONS</b>	
<b>C3</b> (Command, Control & Communications)	<b>COMMAND NET</b>	
		<b>GLOBAL</b>
		<b>GLOBAL ALE</b> (Automatic Link Establishment)
		<b>GLOBAL BLACK</b>
		<b>GLOBAL DISCRETE</b>
		<b>GLOBAL RED</b>
		<b>HICOM</b> (High Command)
	<b>DATA LINK</b>	
		<b>ARTS</b> (Automated Remote Tracking System) (Telemetry)
		<b>JTIDS/MIDS</b>
		<b>SGLS</b> (Space Ground Link Subsystem)
		<b>TADIL-A</b>
		<b>TADIL-C</b>
	<b>COMMUNICATIONS</b>	
		<b>IONOSPHERIC SOUNDER</b>
		<b>ISYSCON</b> (Integrated System Control)
		<b>MARS</b> (Military Affiliated Radio System)
		<b>MICROWAVE</b>
		<b>MSE</b> (Mobile Subscriber Equipment)
		<b>RADIO RELAY</b>
		<b>TACTS</b> (Tactical Trunk Signaling)
	<b>GCCS</b> (Global Command &Control System)	
	<b>SATELLITE COMMUNICATIONS</b>	
		<b>AFSATCOM</b>
		<b>DSCS</b>
		<b>FLTSATCOM</b>
		<b>LEASAT</b>
		<b>MILSTAR</b>



<b>MAJOR FUNCTION IDENTIFIER (SFAF DATA ITEM 511)</b>	<b>INTERMEDIATE FUNCTION IDENTIFIER (SFAF DATA ITEM 512)</b>	<b>DETAILED IDENTIFIER (SFAF DATA ITEM 513)</b>
		<b>SPITFIRE</b> (SPITFIRE Manpack UHF SATCOM DAMA Terminal)
		<b>TROJAN SPIRIT</b>
	<b>TELEMETRY</b>	<b>ARTS</b>
		<b>SGLS</b>
<b>SUSTAINING OPERATIONS</b>	<b>ADMINISTRATIVE</b>	
		<b>BROADCAST</b>
		<b>INSTALLATION PA SYSTEM</b> (Giant Voice)
		<b>PAGING</b>
		<b>TRAVELERS INFORMATION SYSTEM</b>
		<b>UNLICENSED DEVICE</b>
		<b>WIRELESS LOCAL AREA NETWORK</b>
		<b>WIRELESS MIKE</b>
	<b>CIVIL ENGINEERING</b>	
		<b>CIVIL WORKS</b>
		<b>CONSTRUCTION</b>
		<b>INDUSTRIAL CONTROLS</b>
		<b>PRIME BEEF</b>
		<b>PUBLIC WORKS</b>
		<b>RED HORSE</b>
		<b>SAFETY</b>
		<b>SEABEES</b>
		<b>UTILITIES</b>
	<b>COMMAND AND CONTROL</b>	
		<b>BASE OPERATIONS</b>
		<b>COMMAND NET</b>
		<b>MOMS</b>
		<b>TRUNKING</b>
	<b>EMERGENCY SERVICES</b>	
		<b>ALARM SYSTEMS</b>
		<b>DISASTER PLANNING</b>
		<b>EOD</b>
		<b>FIRE</b>

<b>MAJOR FUNCTION IDENTIFIER (SFAF DATA ITEM 511)</b>	<b>INTERMEDIATE FUNCTION IDENTIFIER (SFAF DATA ITEM 512)</b>	<b>DETAILED IDENTIFIER (SFAF DATA ITEM 513)</b>
		<b>HAZMAT</b>
		<b>MEDICAL</b>
		<b>WARNING SYSTEM</b>
	<b>ENVIRONMENTAL</b>	
		<b>RESOURCES CONSERVATION</b>
	<b>LAW ENFORCEMENT</b>	
		<b>CID</b> (Criminal Investigation Command)
		<b>DIS</b> (Defense Investigative Service)
		<b>MILITARY POLICE</b>
		<b>NCIS</b> (Naval Criminal Investigative Service)
		<b>OSI</b> (Office Of Special Investigations)
		<b>SCOPE SHIELD</b>
		<b>SECURITY FORCE</b>
		<b>SHORE PATROL</b>
		<b>SPEED MEASUREMENT SYSTEMS</b>
		<b>SURVEILLANCE SYSTEMS</b>
		<b>TETHERED AEROSTAT RADAR</b>
		<b>WEAPONS STORAGE PROTECTION</b>
	<b>MAINTENANCE</b>	
		<b>AIRCRAFT</b>
		<b>COMMUNICATIONS</b>
		<b>EQUIPMENT CHECKS</b>
		<b>MISSILE</b>
		<b>MUNITIONS</b>
		<b>RAMP CONTROL</b>
		<b>REMOTE CONTROL CRANE</b>
		<b>RUNWAY ICE DETECTION SYSTEMS</b>
		<b>SNOW REMOVAL</b>
	<b>METEOROLOGICAL</b>	
		<b>AMSS</b> (Automatic Meteorological Sensor System)
		<b>ASOS</b> (Auto Surface Observation System)
		<b>AWOS</b>
		<b>GOES</b> (Geostationary Operational Environmental Satellites)
		<b>IMETS</b> (Integrated Meteorological System)

<b>MAJOR FUNCTION IDENTIFIER (SFAF DATA ITEM 511)</b>	<b>INTERMEDIATE FUNCTION IDENTIFIER (SFAF DATA ITEM 512)</b>	<b>DETAILED IDENTIFIER (SFAF DATA ITEM 513)</b>
		<b>NEXRAD</b>
		<b>WEATHER</b>
		<b>WIND PROFILER</b>
	<b>NATURAL RESOURCES</b>	
		<b>CONSERVATION</b>
		<b>WILDLIFE PRESERVATION</b>
	<b>NAVAIDS CONTROLS</b>	
		<b>REMOTE BARRIER CONTROL SYSTEMS</b>
		<b>RUNWAY LIGHTING CONTROL</b>
	<b>SUPPLY AND LOGISTICS</b>	
		<b>AMPS (Air Movement Planning System)</b>
		<b>CSSCS (Combat Service Support Control System)</b>
		<b>INVENTORY/INVENTORY CONTROLS</b>
		<b>MTS (Movement Tracking System)</b>
		<b>POL</b>
		<b>RESUPPLY</b>
		<b>RF TAGS</b>
		<b>SHIPYARD</b>
	<b>TRAINING</b>	
	<b>TRANSPORTATION</b>	
		<b>MOTOR POOL</b>
		<b>TAXI</b>
<b>DOMESTIC SUPPORT OPERATIONS</b>	<b>COMMUNITY ASSISTANCE</b>	
		<b>AERO CLUB</b>
		<b>COLOR/HONOR GUARD</b>
		<b>EDUCATION</b>
		<b>MUTUAL AID</b>
		<b>PUBLIC WORKS</b>
		<b>TRAINING</b>
	<b>CONTINGENCY</b>	
	<b>CONSEQUENCE MANAGEMENT</b>	
		<b>CBR</b>
		<b>CIVIL SUPPORT TEAM</b>

<b>MAJOR FUNCTION IDENTIFIER (SFAF DATA ITEM 511)</b>	<b>INTERMEDIATE FUNCTION IDENTIFIER (SFAF DATA ITEM 512)</b>	<b>DETAILED IDENTIFIER (SFAF DATA ITEM 513)</b>
		<b>ENVIRONMENTAL CLEANUP</b>
		<b>FEMA</b>
		<b>HAZARDOUS MATERIAL RELEASE</b>
		<b>TECHNICAL ESCORT UNIT</b>
		<b>TRAINING</b>
	<b>LAW ENFORCEMENT</b>	
		<b>ANTI-TERRORISM</b>
		<b>CIVIL DISTURBANCES</b>
		<b>COUNTER DRUG</b>
		<b>PROJECT COTHEN</b>
		<b>SPECIAL SECURITY OPERATIONS</b>
<b>OTHER OPERATIONS</b>		
	<b>DTSS (Digital Topographic Support System)</b>	
	<b>EXERCISE</b>	
	<b>EXPERIMENTAL</b>	
	<b>ETRAC (Enhanced Tactical Radar Correlator)</b>	
	<b>HYDROLOGIC</b>	
		<b>LOCKS AND DAMS</b>
	<b>RDTE SUPPORT</b>	
	<b>SEARCH AND RESCUE</b>	
		<b>CAP(Civil Air Patrol)</b>
	<b>SEISMIC</b>	
	<b>SPECIAL COURIER</b>	
	<b>SPECIAL PROJECTS</b>	
		<b>HAARP (High Frequency Active Auroral Research Program)</b>
	<b>SURVEY</b>	
	<b>TEST AND MEASUREMENT</b>	

2. The definitions for the data entries contained in the above table are provided below:

**A2C2S** (Army Airborne Command & Control System)--Used in support of Army Airborne Command & Control System.<sup>5</sup>

**ACS** (Aerial Common Sensor)--Used in support of Intelligence and Electronic Warfare operations.<sup>5</sup>

**ADMINISTRATIVE**--Used for administrative management of personnel and/or material.

**AEGIS**--Used in support of AEGIS cruisers and destroyer weapon system operations.

**A-EPLRS**--Used in support of the Airborne Enhanced Position Location Reporting System (A-EPLRS), a secure, electronic warfare (EW)-resistant tactical transmission system supporting the Army Tactical Command and Control System (ATCCS) and the Army Battle Command System.

**AERO CLUB**--Used in support of flight training and recreational flying clubs.

**AFATDS**--Used in support of Advanced Field Artillery Tactical Data System.<sup>5</sup>

**AFSATCOM**--Used for voice and/or data transmissions over the AFSATCOM system

**AHFEWS** (Army HF EW System)--Used in support of Intelligence and Electronic Warfare operations.<sup>5</sup>

**AIR DEFENSE / INTERCEPT**--Used in support of fire finding exercises and operations.<sup>4</sup>

**AIR DEFENSE WARNING**--Used to identify the presence of hostile aircraft and or missiles.<sup>1</sup>

**AIR DEFENSE**--Used in supporting those defensive measures designed to destroy attacking enemy aircraft or missiles in the Earth's envelope of atmosphere, or to nullify or reduce the effectiveness of such attack.

**AIR FORCE ONE**--Used in support of presidential aircraft operations.

**AIR FORCE SPECIAL OPERATIONS**--Used to support AFSOF units (special operations wings and groups, special tactics groups, and special operations weather teams) which provide aircraft and other support for a variety of SOF missions.<sup>3</sup>

**AIR OPERATIONS**--Used in supporting those functions which typically originate from the air and/or directly support the launching of, actual conduct of, and returning of airborne forces carrying out air operations whether over land or sea.

**AIR ROUTE SURVEILLANCE RADAR**--Used for radar's that monitor aircraft routes.<sup>2</sup>

**AIR TRAFFIC CONTROL**--Used for ground-air and air-ground voice communications dedicated to controlling the movement of aircraft.

**AIR/AIR COMMUNICATIONS**--Used in supporting voice and/or data transmissions between two airborne platforms.<sup>1</sup>

**AIR/GROUND/AIR COMMUNICATIONS**--Used supporting voice and/or data transmissions between airborne and ground-based platforms.<sup>1</sup>

**AIRBORNE COMMAND CENTER**--Used by airborne command post aircraft in support of the national authority or COCOMs.<sup>2</sup>

**AIRCRAFT**--Used in supporting air operation under the jurisdiction of the Department of the Army.<sup>4</sup>

**AIRPORT SURVEILLANCE RADAR**--Used for general coverage radars that are located at airdromes.

**ALARM SYSTEMS**--Used for physical security (e.g., Sensors, Motion Detectors, Intrusion & Duress Alarms, Etc).

**AMPS** (Air Movement Planning System)--Used in support of Air movement operations.<sup>6</sup>

**AMSS** (Automatic Meteorological Sensor System)--Used in support of Intelligence and Electronic Warfare operations.<sup>5</sup>

**ANTI-TERRORISM**--Used in direct support of anti-terrorism.

**APPROACH CONTROL**--Used to provide a pilot conducting flight in accordance with instrument flight rules to commence an approach to an airport.<sup>1</sup>

**AQF** (Advanced Quick Fix)--Used in direct support of command and control, fire control nets, also used for ground surveillance, counter/mortar, and counter/battery operations.<sup>5</sup>

**ARL** (Aerial Reconnaissance-Low)--Used in support of Intelligence and Electronic Warfare operations.<sup>5</sup>

**ARMY AVIATION**--Used in supporting the operation of fixed- and rotary- winged aircraft maintained by the Army; includes but is not limited to attack helicopters, scout helicopters, and utility aircraft

**ARTILLERY**--Used to provide internal command, control, and communications to division and below for fire support.<sup>4</sup>

**ARTS** (Automated Remote Tracking System) (Telemetry)--Used in conjunction with the Space Ground Link Subsystem (SGLS).

**ASAS** (All Source Analysis System)--Used in support of Intelligence and Electronic Warfare operations.<sup>5</sup>

**ASOS** (Automated Surface Observation System)--Used for the collection of weather information used by civil and military aircraft.

**ASW** (Anti-Submarine Warfare)--Used in support of anti-submarine warfare operations.

**ATIS** (Auto Terminal Information Service)--Used for the purpose of giving advice and information useful for the safe and efficient conduct of flights.

**ATFP** (Anti-Terrorism Force Protection) -- Communications used in supporting fleet Anti-Terrorism Force Protection.

**AVENGER-STC**--Used in support of Short Range Air Search Radar (Stringer) operations.<sup>6</sup>

**AWACS**--Used in supporting special DoD airborne early warning aircraft that are equipped with search and height-finding radar and communications equipment for controlling weapon systems and performs the air surveillance and control mission.

**AWOS**--Automatic Weather Observing System: Observes weather conditions at specific location and transmits continuously to aircraft in the area.

**BASE OPERATIONS**--Used in supporting the operations of an Air Terminal; a facility on an airfield that functions as an air transportation hub and accommodates the loading and unloading of airlift aircraft and the in-transit processing of traffic.

**BATTLE COMMAND**--Used in support of command, control, and communications, tactical Internet, and Warfighter Information Network/Satellite networks.<sup>6</sup>

**BEACON**--Used in supporting Marker Beacons, Aeronautical Radio Beacons, and Radar Beacons for radio navigation land stations.<sup>4</sup> Includes Non Directional Beacons (NDR)

**BF E-MAIL** (Battle Force E-mail) -- Used in supporting E-mail communications between ships. This includes E-mail communications with ships from coalition partners.

**BLUE ANGELS**--Used in support of the Navy BLUE ANGELS demonstration team.

**BMDS** (Ballistic Missile Defense System) -- Used in support of ballistic missile defense operations.

**BMEWS** (Ballistic Missile Early Warning System)--Used in DoD's electronic system for providing detection and early warning of attack by enemy inter-continental ballistic missiles.<sup>2</sup>

**BROADCAST**--Used to support broadcasting signal via Television and/or Radio service.<sup>6</sup>

**C3** (Command, Control, & Communications)--Used in supporting those strategic, inter-/intra-theater, or inter-/intra service C3 functions NOT already covered under another category.

**CAP** (Civil Air Patrol)--A private corporation that can be activated by HQ AF to conduct SAR operations.

**CARS** (Contingency Airborne Reconnaissance System)--Used in support of Airborne Reconnaissance operations.<sup>6</sup>

**CAVALRY**--Used in supporting those ground elements whose missions are reconnaissance, security, and economy of force; to find the enemy, to develop the situation and to provide the commander with reaction time and security.<sup>3</sup>

**CBR** (Chemical, Biological, Radiological)-- Chemical, biological, and radiological teams that respond to terrorist incidents in order to assist local, state, or Federal agencies in the conduct of post-incident mitigation actions.

**CID** -- Used in support of U.S. Army (Criminal Investigation Command) CID operations.<sup>6</sup>

**COCOM/GENERAL OFFICER SUPPORT**--Used in support of command and control, and logistics, supporting COCOMs/General Officers.<sup>6</sup>

**CIVIL AFFAIRS**Used for command activities centered on relationship between military forces and civil authorities and citizens in a friendly or occupied country or area. Command performance of certain functions or exercise of certain authority normally the responsibility of the local government.

**CIVIL DISTURBANCES**--Used to support civil disturbance operations.

**CIVIL ENGINEERING**-- Used to support civil engineering activities.<sup>2</sup>

**CIVIL WORKS**--Used to support civil works activities.<sup>2</sup>

**CIWS** (Close-In Weapons System)--Used in support of weapon system.<sup>6</sup>

**CLEARANCE DELIVERY**--Used by air traffic control tower staff to communicate departure instructions to air crews while the aircraft are still on the ground.<sup>2</sup>

**CLOSE AIR SUPPORT** (CAS)--Used in supporting air action by fixed- and rotary-wing aircraft against hostile targets which are in close proximity to friendly forces and which require detailed integration of each air mission with the fire and movement of those forces.

**COLOR/HONOR GUARD**--Used to support military color guard/honor activities.

**COMBAT CONTROL TEAM**--Used in support of Intelligence, Maneuver, Fire Support, Air Defense, Mobility and Survivability, Logistics and Battle Command.<sup>5</sup>

**COMMAND AND CONTROL**--Used for command and control of military operations.<sup>2</sup>

**COMMAND DESTRICT/TERMINATION**--Used by range safety officers to destroy errant missiles or UAVs.

**COMMAND NET**--Used for command and control of the Commanders Net.<sup>6</sup>

**COMMAND POST/CENTER**--Used in supporting Command, Control, and Communications at the Command Post (CP).<sup>4</sup>

**COMMAND POST**--Used in supporting Command, Control, and Communications at the Command Post (CP).<sup>4</sup>

**COMMUNICATIONS**--Used in supporting the collection by visual observation or other detection methods, information about the activities and resources of an enemy or potential enemy or supporting the passing of data concerning the communications characteristics of a particular area.<sup>2</sup>

**COMMUNICATIONS**--Used to support fixed point to point communications links.

**COMMUNITY ASSISTANCE**--Used to support non-specific community assistance activities.

**CONSEQUENCE MANAGEMENT**--Used to support U.S. government interagency assistance to protect public health and safety, restore essential government services, and provide emergency relief to governments, businesses, and individuals affected by the results of a terrorist incident involving weapons of mass destruction.

**CONSERVATION**--Used to support resources conservation activities.

**CONSTRUCTION**--Used to support construction activities (e.g., road building, erection of power lines, construction of dams or bridges, etc.).

**CONTINGENCY**--Used only during unusual situations (e.g., civil disturbances, communications outages, natural disasters, etc.), and kept in service only for the duration of the contingency.

**COUNTER-DRUG**--Used in direct support of counter drug operations.

**CSSCS** (Combat Service Support Control System)--Used by computer software system designed to assist commanders in the planning of Logistics operations.<sup>5</sup>

**CTT** (Commander's Tactical Terminal)--Used to support Command Post operations.

**DATA LINK**--Used in support of the operation of a data link.

**DBRITE** (Digital Bright Radar Indicator Tower Equipment)--Used for DBRITE operations.<sup>6</sup>

**DEPARTURE CONTROL**--Used in controlling aircraft departing from airdromes until they are turned over to air route controllers or go on visual flight rules.<sup>2</sup>

**DIS** (Defense Investigative Service)--Used by DIS organizations.

**DISASTER PLANNING**--Used in direct support of disaster operations.<sup>6</sup>

**DMSP** (Defense Meteorological Satellite Program)--Used in direct support of the Defense Meteorological Satellite Program.<sup>6</sup>

**DOMESTIC SUPPORT OPERATIONS**--Used for various types of military support provided to Federal, state, and local agencies in the areas of disaster assistance, environmental assistance, law enforcement, and community assistance.

**DRONE CONTROL**--Used in direct support of drone control operations.

**DSCS** (Defense Satellite Communication System)--Used for voice and/or data transmissions over the Defense Satellite Communication System.

**DTSS** (Digital Topographic Support System)--Used in direct support of DTSS operations.

**EDUCATION**--Used for military education activities.

**ELECTRONIC WARFARE**--Used in supporting the collection by visual observation or other detection methods, information about the activities and resources of an enemy or potential enemy or supporting the passing of data concerning the electronic characteristics of a particular area.<sup>2</sup>

**EMERGENCY SERVICES**--Used in support of non-specific emergency services.<sup>2</sup>

**ENGINEERS**--Used in supporting Engineers that perform construction, demolition, surveying, road and bridge building, and camouflage for the Army.<sup>4</sup>

**ENVIRONMENTAL CLEANUP**--Used to support environmental cleanup operations.<sup>2</sup>

**ENVIRONMENTAL**--Used to support environmental controls, surveys, and research operations.<sup>5</sup>

**EOD** (Emergency Ordinance Disposal)--Used in supporting EOD during destruction or demolition operations.<sup>4</sup> This includes EOD robotic devices.

**EPLRS** (Enhanced Position Location Reporting System)--Used in support of EPLRS or advanced A-EPLRS system.<sup>5</sup>

**EQUIPMENT CHECKS**--Used to support equipment checks made prior to commencing normal operations.

**ERCS** (Emergency Rocket Communications Systems)--Used to support the Emergency Rocket Communication System or ECM Resistant Communications System.<sup>4</sup>

**ETCAS** (Enhanced Traffic Collision Avoidance System)--Used by aircraft equipped with the ETCAS equipment.

**ETRAC** (Enhanced Tactical Radar Correlator)--Used to support tactical Radar operations.<sup>2</sup>

**EXECUTIVE**--Used by the top echelon leadership of a government agency (e.g., normally used at department level and above where strategic policy is formulated).

**EXERCISE**--Used in supporting a military maneuver or simulated wartime operation involving planning, preparation, and execution.

**EXPERIMENTAL**--Used in supporting activities that require an experimental station class.

**FAADC2** (Forward Area Air Defense, Command and Control)--Used for forward air defense operations.

**FEEDER CONTROL**-- Feeder control transitions aircraft from the en route structure to the initial approach fix for landing.

**FEMA** (Federal Emergency Mgt Agency)--Used to support FEMA (Federal Emergency Mgt Agency) operations.

**FIRE SUPPORT**--Used to support artillery in support of infantry, armored, airborne, and airborne mobile operations.

**FIRE**--Used to notify the presence of a fire, or to direct, control, or coordinate the operations of fire response vehicles, equipment, and personnel during fire suppression or fire prevention activities.

**FLEET SUPPORT**--Used to support fleet units/shore facilities.

**FLIGHT FOLLOWING**-- Issues information and advisories to arriving, departing, and en route aircraft and monitors the flight progress of aircraft. Additionally, flight following posts and relays flight progress reports and posts information to flight data strips, boards, charts and maps.

**FLIGHT INSPECTION**— Normally accomplished by Federal Aviation Administration (FAA) flight check aircraft to determine if specific navigation aids (NAVAIDS) such as NDB, VOR, TACAN, are functioning properly.

**FLIGHT TEST**--Used to support flight test operations.

**FLTSATCOM** (Fleet Satellite Communications)--Used for voice and/or data transmissions over the FLTSATCOM system.

**FORACS** (Fleet Operational Readiness Accuracy Check Site)--Used to support Fleet Operational Readiness Sites.

**FORWARD AIR CONTROL POST**--Used in supporting a highly mobile USAF tactical air control system radar facility subordinate to the control and reporting center and or control post used to extend radar coverage and control in the forward combat area.<sup>3</sup>

**GBCS-L** (Ground Based Common Sensor-Light)--Used to support the ground based sensor system.<sup>5</sup>

**GBS** (Global Broadcast System)--Used for voice and/or data transmissions over the Satellite system.<sup>4</sup>

**GCA**— Ground Controlled Approach System: A radar approach system for aircraft arriving at an airfield.

**GCCS-A** (Global Command & Control System-Army)--Used to support Army GCCS operations.<sup>5</sup>

**GLOBAL ALE** (Automatic Link Establishment)--Used in supporting ALE operations within the DoD global communications network.

**GLOBAL BLACK**--Used in support of the USAF Global HF Network for a non-secure E-mail net.

**GLOBAL DISCRETE**--Unpublished (non-FLIP) HF frequencies assigned to DoD global communications network.

**GLOBAL RED**--Used in support of the USAF Global HF Network secure E-mail net.

**GLOBAL**--HF frequencies assigned to DoD global communications network.

**GMD**—Used in support of ground missile defense operations.

**GOES** (Geostationary Operational Environmental Satellites)--GOES is a series of meteorological geostationary orbiting satellites that provide weather prediction data for the Western Hemisphere and particularly for the U.S.

**GOLDEN KNIGHTS**--Used by the Army's Golden Knights demonstration team.

**GPS** (Global Positioning System)--Used for precise positioning/navigation information.<sup>4</sup>

**GRCS** (Guardrail Common Sensor)--Used in support collection and location system.<sup>5</sup>

**GRIZZLY** (M1 Breacher MineSweeper)--Used to support mine sweeping operations using CNR.<sup>6</sup>

**GROUND CONTROL**--Used in supporting those functions which controls originate from the ground and directly support ground-based operations.<sup>4</sup>

**GROUND INTERDICTION**--Used to support ground operations, convoy, scouting, surveillance etc.<sup>6</sup>

**GROUND OPERATIONS**--Used in supporting those functions which originate from the ground and directly support ground-based operations.

**GSR** (Ground Surveillance Radar)--Used to support ground surveillance radar operations.<sup>6</sup>



**HAARP** (High Frequency Active Auroral Research Program)--A scientific endeavor to study the properties and behavior of the ionosphere to understand its use to enhance communications and surveillance systems for both civilian and military purposes.<sup>2</sup>

**HARBOR-PORT OPERATIONS**--Used for controlling movements of ships in harbors and ports.<sup>2</sup>

**HAVE QUICK**--Used in supporting DoD's Jam-resistant UHF Communications Radio.<sup>2</sup>

**HAZARDOUS MATERIAL RELEASE**--Used to support hazardous material release.

**HAZMAT** (Hazardous Materials)--Used to support operations dealing with hazardous materials.

**HELO CONTROL**--Used to control and coordinate helicopter transit between ships.

**HICOM** (High Command)--Used to support COCOM HF high command net.

**HYDRA** (Hierarchical Yet Dynamically Reprogrammable Architecture) -- Used in support of various shipboard voice communications requirements.

**HYDROLOGIC**--Used for collection of information regarding the waters of the earth and its atmosphere, or for the control and management of these waters.

**IEWCS** (Intelligence Electronic Warfare Common Sensor)--Used in support of Intelligence and Electronic Warfare operations.<sup>5</sup>

**IFF/SIF**--Used to support Identification Friend or Foe/Selective Identification Features activities.

**ILS** (Instrument Landing System)--Used to support VOR and glideslope aircraft Instrument Landing Systems.

**IMETS** (Integrated Meteorological System)--Used to support the collection of weather reports.<sup>5</sup>

**INDUSTRIAL CONTROLS**--Used to support industrial controls.<sup>2</sup>

**INFANTRY**--Used in supporting those ground-based elements designed to close with and destroy the enemy and which serve as a key element of combat power in close combat.<sup>3</sup>

**INSTALLATION PA SYSTEM** (Giant Voice)--Used by installation public address systems.<sup>2</sup>

**INSTRUCTOR/STUDENT TRAINING**--Used in supporting those activities during training which originate from the class room instructions. Mainly used for training purposes.<sup>4</sup>

**INTELLIGENCE**--Used in support of the gathering of intelligence information.

**INTERPLANE**--Used between aircraft in flight.

**INVENTORY/INVENTORY CONTROLS** (e.g., Optical Scanners, RF Tags, NISTARS (Navy Integrated Storage Tracking & Retrieval System)-- )--Used in support of gathering inventory data at exchange, supply, and other logistical type facilities.

**IONOSPHERIC SOUNDER**--Used in support of ionospheric sounder operations.

**I-REMBASS** (Improved-Remotely Monitored Battlefield Sensor System)--Used to support ground surveillance operations.<sup>5</sup>

**ISYSCON** (Integrated System Control)--Used to manage multiple tactical communications systems.<sup>5</sup>

**JSS** (Joint Surveillance System)--Used in supporting the Joint Surveillance System Radars.<sup>2</sup>

**JTIDS/MIDS** (Joint Tactical Information Distribution System)--Used in support of the operation of JTIDS.<sup>5</sup> Used in support of the operation of Link 16 Command and Control Tactical Data Systems. Also known as TADIL-B.

**LAND WARRIOR**--Used to support combat net radio operations for Corps and below.<sup>6</sup>

**LAW ENFORCEMENT**--Used to direct, control, or coordinate the activities of personnel engaged in law enforcement duties (e.g., building and installation security, criminal investigations, police activities, intelligence and counter-intelligence operations, intruder detection, etc).

**LEASAT** (Leased Satellite)--Used for voice and/or data transmissions over the LEASAT system.

**LINEBACKER**--Used to operate in forward combat areas, the Linebacker is capable of shooting down rotary- and fixed-wing aircraft, as well as cruise missiles.

**LLDR** (Lightweight Laser Designator Rangefinder)--Used in support of range finding operations.<sup>5</sup>

**LMRDFS** (Light Man-portable Radio Direction Finding System)--Used to support direction finding system.<sup>5</sup>

**LOCAL CONTROL**--Used by air traffic controllers in the vicinity of an airdrome.

**LOCKS AND DAMS**--Used in direct support of the operation of locks and dams.

**LONGBOW** (Apache Helicopter)--Used by the weapons radar on Apache helicopters.<sup>6</sup>

**LOOTING PREVENTION**--Used in direct support of looting prevention.

**M93A1 FOX**--Used to support Bridge operations.<sup>6</sup>

**MAINTENANCE**--Used to support maintenance activities (e.g., resurfacing of roads, maintenance of power lines, repair of dams or bridges, etc).

**MARS** (Military Affiliated Radio System)--Used for voice and/or data transmissions over the Military Affiliated Radio System.

**MEDICAL**--Used to direct, control, or coordinate the activities of medical personnel and emergency response vehicles.

**METEOROLOGICAL**--Used in supporting the collection by visual observation or other detection methods, information about the activities and resources of an enemy or potential enemy or supporting the passing of data concerning the meteorological characteristics of a particular area.<sup>2</sup>

**MFCS** (Mortar Fire control System)--Used to support command and control of Mortar Fire Control operations.<sup>5</sup>

**MICROWAVE DATA LINK**--Used in supporting the microwave data links.<sup>4</sup>

**MICROWAVE**--Used to support Microwave data links.<sup>4</sup>

**MILITARY POLICE**--Used to support security operations, military laws, orders and regulations, traffic control, crime prevention, investigations, logistics, coordination, and planning of police functions.<sup>4</sup>

**MILSTAR** (Military Strategic and Tactical Relay System)--Used for voice and/or data transmissions over the MILSTAR system.

**MISSILE**--Used in supporting electronic fire distribution system designed for CONUS use in coordinating all elements of air defense from target detection to target destruction.<sup>4</sup>

**MITT/DTES** (Mobile Integrated Tactical Terminal/Distributed Common Ground System Test and Evaluation Strategy)--Used to support mobile tactical terminal.<sup>5</sup>

**MLRS** (Multiple Launch Rocket System)--Used to support the flight parameters of its main carrying missiles and submissiles.<sup>2</sup>

**MLS** (Microwave Landing System)--Used to support Microwave Landing Systems.

**MOMS** (Man on the Move System)--Used in support of Man on the Move System operations.

**MOTOR POOL**--Used to support the motor pool.<sup>4</sup>

**MSE** (Mobile Subscriber Equipment)--Used to provide secure, automatic digitized voice, data, and facsimile communications to the users, whether static or mobile operations.<sup>5</sup>

**MTS** (Movement Tracking System)--Used to support the movement of personnel and equipment.<sup>5</sup>

**MUNITIONS**--Used in support of the storage or movement of munitions.

**MUTUAL AID**--Used for fire, medical, police, and other emergency services between federal, state and local agencies.

**MYSTIC STAR**--Used to support the president of the US and senior federal executives.

**NAOC** (National Airborne Operations Center)--Used in direct support of NAOC operations.

**NASA**--Used in support of NASA operations.

**NATURAL RESOURCES**--Used for the management, protection, and conservation of natural resources (e.g., national forests, public lands, wildlife, etc).

**NAVAIDS CONTROLS**--Used to activate and deactivate visual or electronic navigational aids (e.g., runway lights, radio beacons, unmanned lighthouses, etc).

**NAVAIDS**--Used to furnish navigational assistance to aircraft (e.g., instrument landing system (ILS), nondirectional beacon (NDB), long-range navigation (LORAN), etc).

**NAVAL GUNFIRE SUPPORT**--Used in direct support of Naval Gunfire Support Operations.

**NAVIGATION RADAR**--Used for radar navigation in reduced visibility to assist the operator in determining the range and bearing to obstructions (e.g., other craft or buoys), avoiding obstacles, avoiding collisions, accessing the bank of a river or shore, and as an aid to maintain a vessel in a channel to avoid running aground.

**NAVY SPECIAL OPERATIONS**--Used for special, focused warfare operations conducted by Navy Sea, Air, Land (SEAL) teams, SEAL Delivery Vehicle Teams, and Special Boat Units (SBU) under the cognizance of the Naval Special Warfare Command.

**NCIS** (Naval Criminal Investigative Service)--Used by Naval Criminal Investigative Service organizations.

**NDB**--A signal (beacon) transmitting on a select frequency which is used by aircraft to determine their location in relation to the beacon signal. May serve as a guide to an airfield or location.

**NEXRAD**--Used in support of the Next Generation Weather Radar (NEXRAD).

**NORAD** (North American Aerospace Defense Command)--Used by the North American Aerospace Defense Command.

**NTDR** (Near Term Digital Radio)--Used to support the Army's data communication backbone for platoon to brigade.<sup>5</sup>

**OCCS SUPPORT**--Used for communications support of Observer Controller Communication System (OCCS) programs and projects.

**OSI** (Office of Special Investigation)--Used by Office of Special Investigation organizations.

**OTHER OPERATIONS**--Used in supporting those functions not covered in one of the categories listed above.

**OTHR/ROTHR** (Over-the-Horizon Radars)--Used in supporting the OTHR. Some systems are relocatable.<sup>2</sup>

**PAGING**--A one-way communications system used for selective calling of personnel. (Note: Although paging systems may be used in direct support of functions shown on this list, such as EXECUTIVE or MEDICAL, all paging assignments shall show PAGING as the function name.)

**PAR** (Precision Approach Radar)--Used for Precision Approach Radar operations.<sup>6</sup>

**PATRIOT**— An air defense missile system.

**PAVE PAWS** (Precision Acquisition Vehicle Entry Phased Array Warning System)--Used in supporting the Precision Acquisition Vehicle Entry Phased Array Warning System

**PILOT-TO-DISPATCHER**--Used between the base operations dispatcher and air crews.

**PILOT-TO-METRO**--Used between the base weather facility and air crews.

**PILOT-TO-PILOT**—Communication between air crews in flight.

**POL** (Petroleum, Oil, and Lubricants)--Used to support POL activities during exercises and operations.<sup>4</sup>

**PRIME BEEF**--Used in support of the Prime Beef construction team.<sup>2</sup>

**PROJECT COTHEN**--Federal Anti-Drug Operations.

**PSYCHOLOGICAL OPERATIONS**Used for planned psychological activities in peace and war directed to enemy, friendly, and neutral audiences to influence attitudes and behavior affecting achievement of political and military objectives.

**PUBLIC WORKS**--Used to support public works.<sup>2</sup>

**RADIO RELAY**--Used in supporting signal communication system using very high frequencies and line of sight radio transmitters and receivers in lieu of trunk wire circuits. This system, when used in conjunction with carrier equipment, will provide channels for both voice and Teletype operations.<sup>4</sup>

**RAMP CONTROL**--Used to control the movement of aircraft and vehicle traffic on the flight line.

**RANGE CONTROL**--Used in supporting the Range Control functions on a DoD Range<sup>2</sup> (e.g., Range scheduling).

**RANGE OPERATIONS**--Used in supporting general operations on a DoD Test Range or Military Training.<sup>2</sup>

**RANGER UNITS**--Used in supporting those units that plan and conduct special military operations and have the ability to support conventional military operations.<sup>3</sup>

**RDMS** (Range Data Management Subsystem)--Used to support the RDMS currently being used at the National Training Center (NTC).

**RDTE SUPPORT**--Used for communications support of research, development, test, and evaluation (RDT&E) programs and projects. (These frequency assignments do not have an experimental station class.)

**RED HORSE**--Used in support of air force tactical construction operations.

**REFUELING**--Used in supporting voice communications in support of air-air refueling operations.<sup>1</sup>

**REMOTE BARRIER CONTROL SYSTEMS**--Used to control aircraft barrier systems.

**REMOTE CONTROL CRANE**--Used to control remotely controlled cranes such as in a shipyard, harbor or other major industrial facilities.

**RESOURCES CONSERVATION**--Used to support resource conservation research operations.

**RESUPPLY**--Used in support of re-supply operations.

**RUNWAY ICE DETECTION SYSTEMS**--Used to monitor runway ice detection systems.

**RUNWAY LIGHTING CONTROL**--Used to control remotely controlled runway lighting.

**SAFETY**--Used in support of Public works safety net.

**SATELLITE COMMUNICATIONS**--Used for voice and/or data transmissions over a non-specific satellite system

**SAWDS** (Satellite Automated WX Dist Sys)--Network to disseminate weather information to DoD facilities.

**SCAMP** (Single Channel Anti-Jam Manportable Terminal)--Used to support voice and data links for battle command and control communications.<sup>5</sup>

**SCOPE SHIELD**--Tactical handheld radios.

**SEA OPERATIONS**--Used in supporting those functions which originate from on board ship and/or directly support the launching of, actual conduct of, and returning of forces carrying out sea-based operations; operations in a maritime and littoral environment which contribute to gaining and maintaining freedom of action.

**SEABEES**--Used in support of SEABEES construction activities.<sup>2</sup>

**SEARCH AND RESCUE**--Used in supporting Search and Rescue (SAR) operational use of aircraft, surface craft, submarines, specialized rescue teams and equipment to search for and rescue personnel in distress on land or at sea.

**SECURITY FORCE**--Used in providing installation physical security operations.<sup>2</sup>

**SEISMIC**--Used to transmit measurements of stress, strain, or movements of the earth's crust.

**SENTINEL**-- (AN/MPQ-64 Surveillance Radar)--Used for air surveillance and target acquisition/tracking sensor for Short Range Air Defense (SHORAD) weapons systems.<sup>5</sup>

**SGLS** (Space Ground Link Subsystem) (Telemetry)--Used in conjunction with the Automated Remote Tracking System (ARTS).

**SHIP/AIR OPERATIONS**--Used in supporting airborne units assigned to US Naval ships.

**SHIP/SHIP**--Used in supporting ship-to-ship communications.

**SHIP/ShORE OPERATIONS**--Used in supporting ship-to-shore communications.

**SHIPYARD**--Used in supporting shipyard operations, except remote controlled cranes.

**SHORE PATROL**--Used by shore patrol activities.

**SHUTTLE**--Used in direct support of Space Shuttle operations.<sup>2</sup>

**SIMULATOR**--Used to support simulator activities.

**SINGARS**-- (Single Channel Ground and Airborne Radio System)--Used to support combat arms command and control operations.<sup>5</sup>

**SINGARS-ASIP** (Single Channel Ground and Airborne Radio System-Advanced System Improvement Plan)--Used to support combat arms command and control operations.<sup>5</sup>

**SNOW REMOVAL**--Used to support snow removal activities.<sup>2</sup>

**SOF** (Supervisor of Flying)--Used by the SOF to assist pilots.

**SONOBOUY**— Used for floating electronic sensors designed to provide various data for Navy antisubmarine warfare (ASW).

**SPACE OPERATIONS**--Used in supporting those functions that directly support operational space missions including satellite control and shuttle missions.<sup>2</sup>

**SPECIAL COURIER**--Used by personnel engaged in transporting valuable, sensitive, hazardous, or classified material.

**SPECIAL FORCES**--Used for specially trained, equipped, and organized forces against strategic or tactical targets in pursuit of national military, political, economic, or psychological objectives. These operations may be conducted during peace or hostilities. They may support conventional operations, or be prosecuted independently when use of conventional forces is inappropriate or infeasible.

**SPECIAL OPERATIONS**--Used in directly supporting Special Operations; those operations conducted by specially trained, equipped, and organized DoD forces (e.g., SOF) against strategic or tactical targets during peacetime or during hostilities.

**SPECIAL PROJECTS**--Used in support of communications electronics systems that are generally one-of-a-kind systems (e.g., Special Forces, intelligence, RF propagation systems, ground and avionics communications-electronics weapons systems, etc).

**SPECIAL SECURITY OPERATIONS**--Used in direct support of special security operations.

**SPEED MEASUREMENT SYSTEMS**--Used by law enforcement activities to measure the speed of vehicles.

**SPITFIRE** (SPITFIRE Manpack UHF SATCOM DAMA Terminal)--Used to support digital voice communications.

**SQUADRON/WING COMMON**--A common frequency used for communication within a squadron or wing; (AF) a unit composed normally of one primary mission group and the necessary supporting organizations; (Navy) the basic organizational and administrative unit for naval-, land-, and tender-based aviation; (Marines) a balanced task organization of aircraft groups/squadrons together with appropriate command, air control, administrative, service, and maintenance units.

**STRIKER II** (Advanced Fire Support/Scout/Surveillance System)--Used to support long range, reconnaissance, surveillance and fire support systems.<sup>6</sup>

**SUPPLY AND LOGISTICS**--Used to support general Supply and Logistics operations.

**SURFACE NAVAIDS**--Used to furnish navigational assistance to ships.

**SURVEILLANCE SYSTEMS**--Used to support base security surveillance operations.

**SURVEILLANCE/RECONNAISSANCE**--Used in supporting those strategic and tactical sensors and systems which provide warning of air breathing, ballistic missile, space-based, or tactical ground-based attack or to relay voice and/or data on the activities and resources of a potential or real enemy or the characteristics of a particular area obtained through visual observations or other detection methods.<sup>1</sup>

**SURVEY**--Used on an intermittent basis by field survey teams involved in measurement activities (e.g., geodetic surveys, radiation hazard monitoring, pre-construction site surveys, etc).

**SUSTAINING OPERATIONS**--Used in supporting those functions normally performed in conjunction with the continued operation of a Army Post, Navy/Marine Corps Base, Air Force Base, or ships.<sup>2</sup>

**TACAN** (Tactical Air Navigation)--Used by TACAN systems.

**TACCS** (Tactical Army Combat Service Support Computer System)--Used in support of the TACCS.

**TACJAM** (Tactical Communications Jamming System)--Used to support jamming operations.<sup>6</sup>

**TACTS** (Tactical Trunk Signaling)--Used to support trunking systems.<sup>6</sup>

**TADIL-A**--Used in support of the operation of Link 11 Naval Tactical Data Systems (ship to ship and ship to air) operations. Also used by the USAF for air to ground operations.

**TADIL-C**--High Frequencies (HF) Used in support of the operation of Link 11 Naval Tactical Data Systems (ship to ship and ship to air) operations.

**TARGET ACQUISITION**--Used within a system that identifies valid targets.

**TARGET SCORING**--Used to support target scoring of laser equipment.<sup>4</sup>

**TARGET**--Used to support target scoring and precision tracking radar etc.<sup>4</sup>

**TAXI**--Used by base/installation taxi systems.<sup>2</sup>

**TCAS** (Traffic Collision Avoidance System)--Used by aircraft equipped with the TCAS equipment.<sup>2</sup>

**TCRS** (Target Control System)--Used to support target control functions and exercises at NTC.

**TEAMMATE**--Used to support collection and direction finding systems.<sup>5</sup>

**TECHNICAL ESCORT UNIT**--Used to support a technical escort unit which is a deployable explosive and chemical/biological response team that identifies, escorts, decontaminates, disposes, and mitigates explosive chemical and biological devices.

**TELECOMMAND**--Used to remotely control the operations of an unmanned vehicle (land, sea, air, or space), or to activate and deactivate instruments or devices carried by the vehicle (e.g., missile destruct, guidance of remotely piloted vehicles (RPVs), control of overhead cranes, etc).

**TELEMETRY**--Used in supporting the transmission of telemetry data on a DoD Range.<sup>2</sup>

**TEST AND MEASUREMENT**--Used in supporting the test and measurement functions on a DoD Range.<sup>2</sup>

**TEST RANGE TIMING**--Used in supporting the transmission of timing signals on a DoD Range.<sup>2</sup>

**TEST RANGE**--Used in support of operations that are unique to a government test range (e.g., range control, range safety, range timing, etc).

**TETHERED AREOSTAT RADAR**--Used in supporting the Tethered Aerostat Radars and interface system.<sup>2</sup>

**THUNDERBIRDS**--Used by the USAF THUNDERBIRDS demonstration team.

**TMGS** (Transportable mobile ground subsystems)--Used in support of telecommand operations.

**TOSS** (TV Ordnance Scoring System)--Used in support of telecommand operations in scoring target accuracy on military ranges.

**TOWER**--Controls aircraft within assigned airspace and aircraft/vehicles on ground at airfields.

**TRACKWOLF**--Used to support ground based HF skywave communications intercept and direction finding systems.<sup>5</sup>

**TRAILBLAZER** (Ground Based Communications Intelligence System)--Used by the Army to gather Intelligence.

**TRAINING**--Used to train personnel in the accomplishment of a specific task or set of tasks.

**TRANSPORTATION**--Used to coordinate the routine movement of material and/or personnel from one point to another (e.g., messenger service, supply expeditor, taxi dispatch, etc).

**TRAVELERS INFORMATION SYSTEM**--Used to provide travelers advisories.<sup>2</sup>

**TROJAN SPIRIT**--Used to support the Transportable Trojan Spirit II satellite communications terminal.<sup>5</sup>

**TRUNKING**--Radiotelephony using standard land mobile trunking principles.

**TSU**-- Technical escort unit is a deployable explosive and chemical/biological response team that identifies, escorts, decontaminates, disposes, and mitigates explosive chemical and biological devices.

**UAV** (Unmanned Aerial Vehicle)--Used in supporting the testing and/or operations of pilotless aircraft <sup>2</sup>

**UNLICENSED DEVICE**--Used by the government for use by low power devices normally operated without a license under the provisions of Part 15 of the FCC Regulations.

**UTILITIES**--Used for the management, control, and/or distribution of utilities (e.g., electric power, water, telephone service, oil and gas, etc).

**VOR** (Very High Frequency Omnidirectional Range)--Used for Very High Frequency (VHF) Omnidirectional Range (VOR) operations.<sup>2</sup>

**VORTAC** (VHF Omni-range TACAN)--Used for VORTAC operations.<sup>2</sup>

**WARNING SYSTEM**--A signal or siren that warns of imminent danger (e.g., bomb alert, chemical, tornadoes, etc.)

**WEAPONS STORAGE PROTECTION**--Used to support weapons storage facilities.<sup>6</sup>

**WEATHER RADAR**--Radar frequencies used by aircraft or ground based sites for weather purposes.

**WEATHER**--Used for the transmission of meteorological information (e.g., wind speed, temperature, barometric pressure, forecasts, etc).

**WHCA** (White House Communications Agency)--Used in supporting WHCA operations.

**WILDLIFE PRESERVATION**--Used for game wardens, endangered species/wildlife preservation and tracking the movements of wild animals.

**WIND PROFILER**--Used for sensing wind shear in the vicinity of airports.

**WIN-T** (Warfighter Information Network-Tactical)--Used to support the Army's tactical Intranet consisting of switching/routing/transport that provides voice, data and video services.<sup>6</sup>

**WIRELESS LOCAL AREA NETWORK**--Used to support local area network frequency bands.<sup>6</sup>

**WIRELESS MIKE**--A transmitting device used to provide the audio input to a speaker system. (Note: Although wireless mikes may be used in direct support of functions shown elsewhere on this list, such as RDTE SUPPORT or TRAINING, all assignments for these devices shall show WIRELESS MIKE as the function name.)

**WOLVERINE** (Assault Bridge)--Used to support command and control of bridge operations.<sup>6</sup>

Notes: --

(none) Taken directly from Joint Pub 1-02, *Department of Defense Dictionary of Military and Associated Terms*--

1. Adapted from existing definition(s) contained in Joint Pub 1-02, *Department of Defense Dictionary of Military and Associated Terms*--

2. Definition derived from various DoD sources--

3. Definition extracted or derived from HQ Department of the Army, FM 100-5, *Operations*--

4. Definition extracted or derived from HQ Department of the Army, AR 310-25, *Dictionary of United States Army Terms*.

5. Definition extracted or derived from Command, Control, Communications, Computer, Intelligence & Electronic Warfare and Sensors and Information Management (C4IEWS & IM).

6. Definition extracted or derived from Secretary of the Army Research, Development, & Acquisition via the Internet

## APPENDIX B - ACRONYMS

The following acronyms are used throughout this document. Acronyms extracted from the NTIA Manual and placed in Annexes A-G of Appendix A for reference use have not been included here.

A/A	air to air
A/G/A	air/ground/air
AAG	Aeronautical Advisory Group
AMSL	Above Mean Sea Level
ACTF	Agenda Action File
AFC	Area Frequency Coordinator
ASCII	American Standard Communications Information Interface
AUTODIN	Automatic Digital Network
BR	Radiocommunications Bureau (formerly IFRB)
C-E	Communications-electronics
CENTCOM	Central Command
COCOM	“Combatant Commander” or “Combatant Commands” depending upon context
CONUS	Continental United States
COMSEC	Communications Security
DCS	Defense Communications Systems
DISA	Defense Information Systems Agency
DMS	Defense Message System
DoD	Department of Defense
EC	Earth Coverage
ECCM	Electronic Counter Countermeasures
ECM	Electronic Counter Measures
EMC	Electromagnetic Compatibility
ERP	Effective Radiated Power
EUCOM	European Command
EW	Electronic Warfare
FAA	Federal Aviation Administration
FAS	Frequency Assignment Subcommittee
FCC	Federal Communications Commission
FMO	Frequency Management Office
FMSC	Frequency Management Sub-Committee (formerly ARFA)
FP	Frequency Panel
FRRS	Frequency Record Resource System
GAFC	Gulf Area Frequency Coordinator
GMF	Government Master File
HF	High Frequency
IAW	In Accordance With
IRAC	Interdepartment Radio Advisory Committee
ITU	International Telecommunication Union
JCS	Joint Chiefs of Staff
JFCOM	Joint Forces Command
JFMO	Joint Frequency Management Office
JFP	Joint Frequency Panel
JNTSVC	Joint Service

JSC	Joint Spectrum Center
KEYMAT	Keying Materiel
LANTCOM	Atlantic Command
MAG	Military Advisory Group
MAJCOM	Major Commands
MCEB	Military Communications – Electronics Board
MILDEP	Military Department
MRFL	Master Radio Frequency List
NAVAIDS	Navigation Aid System
NATO	North Atlantic Treaty Organization
NSA	National Security Agency
NTIA	National Telecommunications and Information Administration
OUS&P	Outside United States & Possessions
PACOM	Pacific Command
PC	Personal Computer
PD	Pulse Duration
PLAD	Plain Language Address
PRR	Pulse Repetition Rate
PPS	Pulses Per Second
PO	Periodic Output
RDTE	Research, Development, Test & Evaluation
SCIF	Sensitive Compartmented Information Facility
SFAF	Standard Frequency Action Format
SIPRNET	SECRET Internet Protocol Router Network
SOUTHCOM	Southern Command
SOPs	Standard Operating Procedures
SOPWG	Spectrum Operations Permanent Working Group
SCG	Security Classification Guide
US	United States (50 states and the District of Columbia)
USA	The 48 contiguous states and the District of Columbia
US&P	United States and Possessions
USAF	United States Air Force
JFCOM	Joint Forces Command
UIC	Unit Identification Code
USMC	United States Marine Corps
YYYYMMDD	The four digit year, two digit month and two digit day of the month



## APPENDIX C - DISTRIBUTION

The following list of addressees will receive a paper copy of this document and any subsequent changes. Please contact [doyend@jsc.mil](mailto:doyend@jsc.mil) if any organization addressee that has access to an automated copy of this document and can be removed from this list. An automated copy of this document is on most JSC database CD ROM products. This document is also available from the JSC Web site at <http://www.jsc.mil/Documents/mcebdocs.asp>.

Chief of Staff, US Army  
Chief of Naval Operations  
Chief of Staff, US Air Force  
Commandant of the Marine Corps  
Director, National Security Agency Attn: Spectrum Center,  
9800 Savage Road, SUITE 6401, Ft. Meade, MD. 20755-6401  
Director, Defense Information Systems Agency  
Director, Joint Interoperability and Engineering Organization  
Director, Command, Control, Communications, and Computer Systems (J6)  
Director for Information Systems for Command, Control, Communications, and  
Computers (C4), US Army  
Director, Space and Electronic Warfare, US Navy  
Deputy Chief of Staff, Command, Control, Communications, and Computers, US Air Force  
Office of Assistant Secretary of Defense (C3I)  
Office of Assistant Secretary of Defense (ISA)  
Office of the Army Spectrum Manager, HQDA, ODISC4, (SAIS-SM)  
Assistant Chief of Staff, Command, Control, Communications, Computer and Intelligence  
Department (C4I), US Marine Corps  
Commander, US Transportation Command (TCJ6-OP),  
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Commander, North American Aerospace Command (NPCF),  
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Commander, US Northern Command (JFMO NORTH),  
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Commander, US Strategic Command (J651),  
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Commander, US Central Command (CCJ6-CO-F),  
7115 S. Boundary Blvd., MacDill AFB, FL 33621-5101  
Commander, US Special Operations Command (SOIO-RR-C),  
7701 Tampa Point Blvd., MacDill AFB, FL 33621-5323  
Commander, Forces Command (FCJ/6), Ft. McPherson, GA 30330-6000  
Commander, HQ, AFSPC/SCNI 150 Vandenberg Street, Suite 1105, Peterson AFB, CO 80914-4510

**Commander, US Europe (ECJ6-F)**, Unit 30400, Box 1000, APO AE 09128-4209  
US EUCOM FREQ MGT FLD OFC/Brussels, (FMFO/DEL),  
PSC 80, Box 201, APO AE 09724  
CDR 5TH SIGNAL COMMAND (ASQE-OP-WF), CMR 421, APO AE 09056-3104  
USNAVFORCES EUROPE, (N622), PSC 802, Box 6, FPO AE 09499-0156  
HQ USAFE CSS/SCOF Unit 3325 Box 125 APO AE 09094-3325  
COMSOCEUR (SO-J6),  
Attn: Frequency Manager Unit 3400, Box 1000 APO AE 09128-4209

**Commander, US Pacific Command (JFMO PAC)**,  
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Commander, US Army Pacific (APIM-OIO, APIM-TS) Ft. Shafter, HI 96858-5100  
Commander, U.S. Pacific Fleet  
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HQ PACAF (SCNMS), 25 E. Street, STE C-307, Hickam AFB, HI 96853-5409  
COMUSFORSJAPAN (J-67), Unit 5068, APO AP 96328-5068  
ACOFs, USFK (J-6), (FKJ6-OF), APO AP 96205-0010  
MCTAMSPAC, Attn: FM Code N353, 500 Center St., Wahiawa, HI 96786  
HQ USARJ/9<sup>th</sup> TAACOM, Attn: APAJ-IM/Mr. Donald, Unit 45005, APO AP 96343-5005

Commander, Joint Spectrum Center (JSC-J6),  
2004 Turbot Landing, Annapolis, MD 21402-5064

**USMCEB OJCS, Military Secretary**, Room 1E833, Pentagon, Washington, DC 20318-6100  
Army Frequency Coordinator, USASA, Military District of Washington  
(AFST-OP), Ft. McNair, Washington, DC 20319-5050  
DoD Western Area Frequency Coordinator (WAFC),  
(Code 3208), Bldg. 735, Pt. Mugu, CA 93042-5000  
DoD Eastern Area Frequency Coordinator (45CS/SCXF),  
1225 Pershing St, MS9131, Patrick AFB, FL 32925-3341  
DoD Area Frequency Coordinator, Puerto Rico, (Code 022),  
PSC 10008, Box 3023, FPO AA 34051-9000  
DoD Gulf Area Frequency Coordinator (96CG/SCWF),  
201 W. Eglin Blvd, Ste 206, Eglin AFB, FL 32542-5818  
DoD Area Frequency Coordinator, (99CS/SCXF)  
5870 Delvin Dr., Suite 102, Nellis AFB, NV 89191-7075  
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## APPENDIX D – SUMMARY OF MAJOR CHANGES

1. This change supersedes MCEB PUB 7, Frequency Resource record System (FRRS) DoD Standard Frequency Action Format (SFAF) dated 31 December 2003. The following significant changes were made in the main part of the document. Minor formatting and grammatical changes were made throughout document. Definitions for Permanent and Temporoay Assignments were added to paragraph 1c. Paragraph 6 was added to reflect the required data fields supporting various analysis capabilities. Table A1, Summary of Data Item Specifications was updated to reflect the major changes noted below:

SFAF ITEM	CHANGE
005	Add declassification instruction “DEVENT” and Special Handling Code “C”.
013	Added new data item: Declassification Instruction Comment
019	Change 1.5 to 1.4 to match DoD 5200.1-R
141	Add required for CENTCOM serial numbered records.
208	Change to no longer required by Air Force.
407	Change to no longer used by DoD.
470	Change to no longer used by DoD.
471	Change to no longer used by DoD.
472	Change to no longer used by DoD.
502	Add required for CENTCOM serial numbered records.
512	Add Air Defense under Air operations
513	Under 511. Air Operations and 512. Air Defense Add “BMDS”, “GMD”.
702	Add required for CENTCOM serial numbered records.
804	Add a third part to this data item: Number of Frequencies
903	Change to no longer used by DoD.
904	Change to no longer used by DoD.
905	Change to no longer used by DoD.
906	Change to no longer used by DoD.
926	Change to no longer used by DoD.
950	Change to no longer used by DoD.
956	Add required for Army serial numbered records.
964	Change to no longer used by DoD.
965	Change to no longer used by DoD.

#### 4. Other changes include:

- a. Revised Annex A-C, Geographical Abbreviations (Country Abbreviations)
- a. Revised Annex A-D, Manufacturer Codes
- b. Revised Annex A-F, IRAC Approved Record Notes
- c. Revised Annex A-I, List of DoD Agency Specific Function Identifiers
- d. Replace Appendix D – Summary of Major Changes